THE TIMES
Higher Education
SUPPLEMENT

Five man science forum will coordinate policy

by Alan Cane
Science Correspondent

The five Department of Education and Science research councils have set up a top-level forum to coordinate their science policy activities and to protect their interests. Meeting monthly, it consists of the five research council chiefs and is known as the HORC (Heads of Research Councils) meeting.

Although it has no statutory powers, it is the most important of the six committees set up since the Rothschild reorganization to promote collaboration between the councils.

It is chaired by Dr W. M. Henderson, secretary of the Agricultural Research Council. The other members are Sir John Gray, Medical Research Council; Sir Sam Edwards, Science Research Council, Sir Peter Kent, Natural Environment Research Council, and Mr Robin Matthews, Social Science Research Council.

Although HORC meetings have been minuted from the earliest days, a secretary, Dr David John of the SRC, has been appointed, and the research councils now present their corporate image through a new letter heading.

Dr Henderson explained that HORC had three chief functions:
- it considers research council policy in relation to government and the public in general, such as preparing evidence for parliamentary select committees and the preparation of the council's forward look for the DES;
- it takes an overview of the inter-council coordinating committee, an elaborate exercise through which the councils hope to improve their housekeeping and their common advantage. It has coordinating groups concerned with accommodation and building, grants and awards;
- it attempts to eliminate overlap in the council's scientific responsibilities.

Dr Henderson emphasized that HORC was not concerned with the day-to-day affairs of the individual councils. Its chief importance was the insight it provided into the preoccupation of the councils with their future.

It is only three years since the Rothschild reorganization of civil research, and the research council system is only just settling down under the new arrangements. Sir John Gray emphasized this week at an MRC press conference that what was needed was a period without interference.

It is understood that Mr Reg Prentice, when Secretary of State for Education and Science, gave the councils an assurance that they would enjoy a period of stability, but Mr Mulley has made no such promise publicly.

The research councils see among the chief threats to stability:
- funds declining in real terms;
- so much financial support from customer departments that they become virtually a research arm of government (the Ministry of Agriculture finances 55 per cent of the ARC research budget and is believed to be eager to spend much more with the council);
- many people within Whitehall and within the councils would like to see a single research council responsible for all DES scientific research. The threat is that the ARC would be absorbed by MAFF, the MRC by the DHSS and the SRC and the NERC would be combined as one council on the new site at Swindon.

HORC's chief role is to maintain and preserve the freedom of the research councils. Dr Henderson said this week there were no indications that drastic changes in the system would take place in the foreseeable future.

Low returns make students a poor investment–finance don

Much of the £1,300m spent annually by central and local government on higher education is economically unjustifiable and should be cut, a senior financial specialist says.

Professor Alan Merrett, visiting professor of finance at the London Graduate School of Business Studies, says the level of return to the community obtained on investment in a university education is ludicrously inadequate.

"My own estimates are that the total cost (at 1972 prices) of a university education was around £10,000, including capital cost, interest and taxes. Taking the cost of support from parents and earnings foregone at school and university into account, the total was some £15,000."

He says: "The level of return on this sum as represented by the additional earnings of the university educated is even on average less than 7 per cent in real terms, after allowing for inflation. The return in the shape of additional taxes received back by the community from these higher earnings and in *return for the enormous ex gratia* provision of £10,000 (probably in excess of £14,000 at current prices) is substantially negative in that only a fraction of the capital cost is ever recovered."

Writing in *The Times Educational Supplement*, Professor Merrett proposes that educational provision should be based on high economic and cultural return. He suggests:
- state aid for university students should be limited to those taking subjects with an economic rate of return greater than 20 per cent;
- provision for all other students to be cut to one-fifth of the present allocation and awarded strictly on merit.

Professor Merrett says: "This would be far more effective than the introduction of any system of loans which would involve substantial administrative costs and which would then have to be at very high money rates of interest if they were to provide the community with any real recovery of the cost of university education."

Professor Merrett also argues that educational spending in Britain imposes a crippling economic burden on the lower paid to produce "the most functionally inadequate educated class of any major industrialized country".

He says that three quarters of the public sector bill is met by the lower income groups (those earning less than £75 a week, on his definition).

The growth of educational services, he claims, deprives industry of badly needed, intelligent and gifted lower and middle management and contributes to inflation. "In sum the public sector is a massive social and financial burden to the very income groups who have been held to justify its enormous growth."

CNAA report brings help for Mr Miller

by David Walker

The Council for National Academic Awards has reported favourably on the Polytechnic of North London, helping the position of its director, Mr Terence Miller, who is likely to be reprimanded by a government committee of inquiry into his conduct.

It is understood the government have considered setting up a kind of inner cabinet to monitor Mr Miller's decisions. At the same time the CNAA's academic structure now approved, the CNAA will effectively end some members of staff call it "a man band role".

The report on Mr Miller's conduct, written by a committee under Sir Eric Stockdale, will not officially be seen by most of the governors at their next scheduled meeting in November. It is likely to discuss some means of keeping a close watch on him, perhaps through an informal code of conduct.

Mr Miller has also been given a fillip by events outside PNL in the senate of London University which met last Wednesday. There the nomination of Professor E. Lefevre, of Queen Mary College, the governors was deferred until autumn at the instigation of some of the convocation senators. Professor Lefevre is understood to have been marked down in some quarters as unfriendly to Mr Miller.

London University nominates members of the court of governors of the PNL.

The CNAA report and accompanying letter follow very closely recommendations made by the visiting party which has visited the technic in recent months. The menus have also been sent to Sir Briault, education officer of the ILEA, and will be considered by the by the last meeting of the joint visory committee of the ILEA the polytechnic which made drastic changes in the composition of the polytechnic's academic board a year ago.

The new faculty and school boards, which have barely begun to operate, met the CNAA's approval although some minor aspects of PNL's organization and accreditation were criticized.

Difficulties linger in the business studies department at PNL. It is understood that Mr Miller may have made some drastic proposals about the department at a governors' meeting on June 23 which, however, was taken up by consideration of Mr Miller's own action in writing to the Department of Education about further cuts in student representation on the academic board.

Local authority money squeeze threatens two adult colleges

by Sue Reid

Two adult education colleges in the Midlands face closure later this year because their local authorities cannot provide the money to keep them open.

Attingham Park, near Shrewsbury, is to close at the end of November as Salop County Council will not give it financial help to continue, and Huntercombe Manor is due to be closed by Buckingham County Council in December.

In Attingham's case appeals for a national grant have been unsuccessful. The Department of Education and Science has made it clear no aid will be forthcoming and the onus of supporting the independent residential college rests with the Salop Education Committee.

During the past 18 months renewed approaches to local authorities apart from Salop County Council, which provided £36,660 in 1974/75, have been unsuccessful except in one case. Lord Boyne, chairman of the governors, says reserves will be eliminated by the operating deficit and the college, if allowed to continue, would begin the next financial year with an overall deficit of £2,000.

The governors have said in the past that it would be unreasonable for them to attempt to carry on or for the county council to make any special effort to do so until the attitude of the Government was clarified. But a question raised in the House of Lords by Lord Bridgeman, another governor, outlining the plight of Attingham resulted in Lord Crowther-Hunt, Minister of State for Higher Education, underlining Salop County Council's *responsibility*.

When Sir John Langford-Holt MP for Salop, raised a question in the House of Commons, he was given a similar answer by Mr Fred Mulley, Secretary of State for Education and Science.

The offer of a £21,000 grant by Salop County Council to cover the year will not be enough and appeals for support from well-wishers and users have not been successful.

Huntercombe Manor, in Buckinghamshire, has a slim chance of reprieve. Although the local authority says the college faces a deficit of between £15,000 and £20,000 this financial year and must close, Berkshire County Council may buy the premises as a residential centre for Slough College of Technology.

Fircroft College, Birmingham, is a third adult education college under threat of closure although any shutdown is likely to be only temporary. After weeks of student unrest the college may be closed next term while its future is examined.

Scots seek meeting on devolution

The Scottish universities are seeking a special meeting with Short, Lord President of the Council and member of the Cabinet with special responsibility for devolution.

At a recent meeting of the university courts it was decided they had to set their views before the Government in advance of the White Paper on devolution.

Preliminary negotiations for a meeting are understood to have been between Sir Sam Curtis, principal of Strathclyde University, and Mr Gerry Fowler, minister of the Privy Council office and Mr Short's devolution team.

NEXT WEEK

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THES survey on the state of universities
David Martin on Thomas Szasz
CVCP report on postgraduate education

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1,000 posts may be vacant survey indicates

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Sir Fraser Noble, vice-chancellor of Leicester University, said that the deterioration of the staff-student ratio—at present 1:8.2 at Leicester which may worsen to 1:10 next session—was worse than the figures suggested because of the reduction in non-academic staff and back-up resources to assist research.

"This has quite a telling effect on morale, particularly in the arts and social sciences, where although university teachers are obliged to undertake research, many of them incur a good deal of personal cost in meeting the expenses of research projects for which the university has never been able to provide the full cost.

"Members of these faculties are always unfavourably placed in this respect by comparison with members of faculties like science and medicine, which draw more readily on the support of the research councils, and which, of course, are generally much better placed in terms of staff: student ratio."

The survey showed that seven universities had about 326 posts for technicians and other non-academic staff left vacant as an economy measure.

One vice-chancellor was in odds with his colleagues. Dr S. L. Bragg (Brunel) wrote: "When times are hard we ought surely to be concentrating our efforts on what has to be done and not on what we could have done had they been easier. Universities are supposed to be one of the country's major resources of intelligence and given clear and consistent objectives we ought to be trusted to get on with the job.

"Indeed if HEs was always easy the need for universities like Brunel, in the council's scientific responsibilities.

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University grant levels unlikely before Christmas

The universities are unlikely to learn their grants for 1976-77, the final year of the present quinquennium, before Christmas, 1975, sources close to Government were saying this week.

It was clear from Mr Healey's speech in the Commons on Monday that in all probability educational expenditure will have no growth in real terms in the next two or three years.

Mr Healey said: "The outcome of the current review, which is bound to require a new look at priorities for public spending, will be announced when completed later this year.

He was confirming Mr Mulley's speech two weeks ago when he warned that it would be best to assume, for planning purposes, that there would be little room for growth in real terms in the next few years.

Figures published in Hansard last week show that expenditure per head of population in 1974-75 was £99 for education, £127 for social security and £73 for defence. The increase since 1970-71 in real terms was £20 for education and social security and £4 for defence. Greatest increase was in housing at £37.

Lukewarm response delays student letting changes

Legislation designed to remove students from the provisions of the Rent Act 1974 has been postponed by the Government.

The announcement was made in the House of Lords by Lord Crowther-Hunt, Minister for Higher Edu-

Queen's University has new head

The senate of Queen's University, Belfast, has appointed as its next vice-chancellor and president Professor Peter Froggatt, professor of epidemiology and dean of the faculty of medicine since 1971. He succeeds Sir Arthur Vick on October 1, 1976.

Professor Froggatt, who was an undergraduate at Trinity College, Dublin, has experience of both general practice and of industrial medicine. He is a fellow of the Royal College of Physicians of Ireland, a member of the Royal College of Physicians (London) and a foundation member of its faculty.

Sex barrier lifted by new legislation

A new clause in the Sex Discrimination Bill will allow educational charities in England and Wales to offer to both sexes grants and scholarships *formerly restricted to one sex*.

The clause was moved in Parliament by Lord Crowther-Hunt, Minister of State for Higher Education, who argued that although it was a long-standing principle of charity law that the donor's wishes be respected as far as practicable, education was an area in which the law should reflect social change.

It would be in the spirit of the Bill to allow trustees of educational trusts to apply to the Secretary for Education for an order to remove or modify restrictions, he said.

A similar clause was agreed for

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University dons trapped by £6 limit

by David Walker

University teachers will get an additional £6 a week on top of their arbitration award agreed last month, instead of the expected extra 20 per cent, according to unconfirmed reports this week.

The rise, in accordance with the Government's new pay norms in the battle against inflation, would mean an extra increase of just over 11 per cent for a lecturer and about 3 per cent for a professor on the average salary of £8,967.

Including an overlapping threshold payment of £83, the Government's decision would give all university teachers an extra £400 a year, increasing the starting salary for a university teacher to £3,173.

The Association of University Teachers disputes the interpretation that the Government is said to have put on the Government White Paper which would bring the settlement of the outstanding part of the pay claim within the new pay code.

Mr Laurie Sapper, general secretary, argues that *the cost of living payment fell within the arbitration* tribunal's findings and so escaped the Government's deadline for its anti-inflation policy.

The award pushes the university teacher ahead of the polytechnic lecturer at most career points although the starting grade of most polytechnic teachers, lecturer II, remains £106 ahead of the university teacher's starting point. The whole of the polytechnic principal lecturer grade is now beneath that of the university senior lecturer by roughly £200.

This apparent restoration of the differentials which existed before the Houghton Report late last year on non-university teachers' salaries is justified by the AUT, according to the findings of the arbitration tribunal.

The tribunal said explicitly that differences in work merited recognition and followed the AUT's submission to it in emphasizing that university teachers had to undergo strict probation unlike polytechnic teachers. It concluded that the points on the respective pay scales were not comparable.

"It is neither appropriate nor practicable to attempt to maintain a direct link between the range from lecturer to senior lecturer in universities and from lecturer II to principal lecturer in polytechnics", it said.

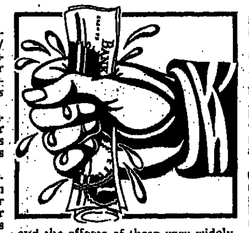
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Laurie Sapper page 24

Salaries in October, 1975		University Arbitration	+£12	Polytechnic	School
Lecturer	(min)	2,861	3,173	3,279	2,653
	(max)	6,133	6,445	6,417	5,940
Professor	(min)	7,384	7,896	4,896	4,110
	(ave)	8,967	9,279	8,913	9,996
	(max)				

NOTES 1. The first university column includes £83 threshold payment.
2. The polytechnic column is based on the Lecturer II/Senior Lecturer grades. The minimum for a Grade VI head of department is £8,037.
3. *School salaries are for Scale 2 and 3 teachers to Scale 4 and senior teachers as well as for* head teachers against professors.

Polys face stifling of staff growth and improvements

by Alan Cane



Polytechnics must expect a significant deterioration in their staff/student ratios and limited opportunities to improve the quality of their institutional life, according to a survey carried out by *The Times Higher Education Supplement*.

It seems likely that student numbers will rise between 7 and 9 per cent nationally in the polytechnics next year, but that staff numbers will hardly grow at all.

In three of the five London polytechnics, staff numbers have been cut by a total of 47 by the Inner London Education Authority. For South Bank Polytechnic this means a cut of 3.8 per cent in its academic establishment and Mr. Vivian Pereira-Mendoza, the director, comments: "It was expected that this would be achieved by our not filling vacancies as they occurred rather than by any planned system of reductions in those departments best able to accept them.

"Not surprisingly, the movement of staff has been least in these least hard-pressed areas and some reductions have inevitably had to be made in other departments where reductions are not justified by either the student numbers or the overall workload."

"Inevitably, this will affect the student intake in 1975-76. Some departments whose courses are in high demand will have to limit their intakes accordingly."

At City Polytechnic, where there has been a cut of 12 teachers and five research staff and where student targets for 1976-77 have been reduced by 500 full-time equivalent students, Dr Arthur Saddaby, the provost, comments: "We are being forced by the ILEA to reduce the establishment of teaching staff in spite of the fact that in arts and social sciences our staff student ratios are at the level recommended by a sub-committee. "In the areas of work where the demand is the greatest, accountancy and taxation, the pressure of demand for places is such that student/staff ratios are running at 17:1 and expansion has to be restricted because staff are already overloaded."

Most polytechnics have suffered cuts in their proposed budgets; Brighton Polytechnic, however, was awarded a real growth rate of about two per cent.

The amounts lost from budgets and the effects of these vary widely from polytechnic to polytechnic. At Central London Polytechnic, which lost—in addition to 15 teachers and 4,000 part-time hours—£129,890 from its proposed budget for 1975-76, Mr Malcolm Orr, the academic registrar, notes: "We can mount the main *body of the programme by taking* up some slack which inevitably exists in an institution of this size and by rationalizing the organization of teaching groups."

But he goes on to warn: "A reduction in the advertising budget may mean we are less effective in recruiting the best candidates for the job, so that we replace staff with teachers who may be below our normal standard".

At Plymouth Polytechnic Dr R. F. M. Robbins, the director, notes that the 1975-76 budget was planned to meet only inescapable commitment, £70,000 having been pared from the original.

And at City of London, which lost £710,000, Dr Sudbaby noted: "These cuts are forcing the polytechnic to utilize all its small working balance by the end of 1975-76 when we shall face a very grave situation."

Mr David Bethel, director of Leicester Polytechnic, where £537,783 has been cut from the estimates against the suggestion that £25,000 might be restored, warned of dangers to students: "Improvements in safety, health and fire precaution safeguards will be further delayed at a time when, because of the reduced staff/student ratio, students using laboratories and research machines will have less supervision. The standards of equipment, furniture and books per student will be at an even lower level than hitherto."

Outside London, staff posts do not seem to have been cut, but many are frozen. Dr Maurice Hutton, rector of Sunderland Polytechnic, gave a representative reply: "Within the polytechnic all posts are frozen in that the rector must give permission before any post can be advertised. Before an advertisement appears, all heads of departments are asked whether any of their staff can undertake all or part of the work envisaged for the new member of staff."

Across the country it seems that the staff/student ratio averages out at about 7:1 for the polytechnics, although there are great variations between polytechnics and departments within polytechnics.

All the polytechnics who took part in the survey make clear how difficult it is to analyse polytechnic statistics, or to compare one polytechnic with another. On the question of comparing universities with polytechnics, Dr Robbins wrote: "I do not envy you your task of comparison between *polytechnics while* further cross-comparison with universities, I would suggest, is very nearly impossible."

The chief difficulties are:
- The London polytechnics are financed differently from the rest;
- There is no general agreement on a formula for estimating FTE students;
- There is no comparison between the numbers of back-up staff at universities and at polytechnics;
- Polytechnic finance is much more complicated than the universities block grant system.

Few polytechnic directors felt able to comment on the development of Government policy as indicated in the speeches of Lord Crowther-Hunt although all are clearly anxious about the development of their institutions.

On the question of student targets, Mr Pereira-Mendoza wrote: "It is virtually impossible to answer this question until some further indication is given of the level of financial support forthcoming."

Dr D. E. R. Godfrey wrote: "I believe that we must improve staff/student ratios but I would much prefer it to be done by increasing the number of students in many of our courses, notably science and engineering which are under-supported, and this will require national action by the Government and by industry."

Poly government page 3

Inquiry into students on the dole

by Alan Wood

An inter-departmental inquiry had been set up to examine urgently the whole question of students' claims for unemployment and supplementary benefit, said Mrs Barbara Castle, Secretary of State for Social Services, in a Commons written reply.

She said the number of students claiming supplementary benefit in the vacations had increased very rapidly in the past two or three years and was placing a great strain on local social security, unemployment benefit and employment offices, particularly in the short vacations. This was a matter which needed careful consideration.

She was replying to Mr John Cunningham (Whitehaven, Lab.) who drew attention to the increasing number of students claiming supplementary benefit during vacations.

Mrs Castle said figures released last week by the Department of Employment showed that in Great Britain on July 14 some 92,000 adult students on vacation were registered for employment. A substantial number of these would be claiming supplementary benefit.

Exchange rate favours Britain

Twice as many British students study in France as part of their degree courses as do French students in Britain because of different financing and admission arrangements in the two countries.

The two systems are outlined in recent reports by the British Council and the French Government's *Office National des Universités*, which show that last year 1,600 British students were enrolled at French universities and 250 French students in British higher education, with some 492 in private institutions.

French students must come through the UCCA system, while British students had, until this year, automatic access to French institutions. British students have their grants as well as the benefit of the French system of indirect subsidies to students, but French students in Britain must pay the full economic rate for food, accommodation and travel from their own pockets.

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Physics innovations 'need DES funds'

Innovations in university physics degrees cannot continue without government funding, Dr Clifford Butler, director of the Nuffield Foundation, told the International conference on physics education in Edinburgh on Wednesday.

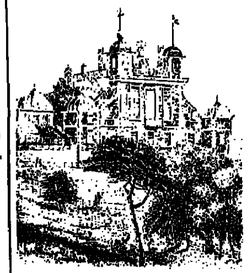
Studies of subject content issues that fell outside the remit of the Science Research Council, such as the Nuffield Foundation were giving "pump-priming grants for, desperately needed some modest support. The financial difficulties charitable trusts were facing made it impossible for them to continue with this indefinitely.

The chronic shortage of mathematics and science teachers could mean the end of physics as a subject in its own right in schools before the age of 16, Dr Butler said.

The trustees of the Nuffield Foundation have appointed Mr John Maddox to succeed Dr Butler as director from October 1. Mr Maddox was formerly editor of *Nature* and was an assistant director of the *foundation from 1964 to 1966.*

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Council's praise gives PNL big lift for its 'second lap'

by David Walker

The favourable report from the Council for National Academic Awards has set the Polytechnic of North London off well on its second lap, Mr John Diamond, chairman of the governors, said last week.

He said: "Mr Terence Miller, the director, has played a part in the progress but cohesion in the polytechnic has also grown. The advances are due to a new teaming-up within PNL.

"We wish to endorse the CNAA's tribute to staff at all levels in the polytechnic for their positive contribution towards the achievement of a cooperative approach to solving problems and towards the creation of a polytechnic identity."

The CNAA endorsed the findings of its visiting party and in its report, which was delivered to the PNL and the Inner London Education Authority last week, praised the changes in the running of the polytechnic and the progress in improving physical facilities.

The report said: "It was felt that the council's critical report in 1973 combined with the constraints imposed by the current economic climate had probably been a factor in causing the PNL to mature as an institution rather more rapidly than might otherwise have been expected and that there were definite signs that an academic community was being created in an environment which had become more conducive to the conduct of degree level work."

On the changes in academic structure, which have broadly involved devolution of power to the faculties and a different composition for the academic board, the CNAA said the benefits of the clear structure would become apparent in decisions and policies within PNL.

"Members of the visiting party were most encouraged to note that the terms of reference of the faculty boards has been strengthened by the academic board's decision to delegate to them responsibility for, among other things, the control of courses in the faculty, the coordination and deployment of resources and the development of new courses and research."

The report dealt with the rather ambiguously defined scope of the director's powers. "It welcomed the transfer of power from the establishment sub-committee to a committee answerable to the academic board. This would diminish the direct power of the director and his deputies.

"While recognizing that the establishment sub-committee performed a very difficult task in a contentious area members of the visiting party commented on the dangers inherent in the polytechnic's interpretation of the broad general terms in which the functions of the director were stated in the articles of association to give this specific and exclusive power to the director; they felt this mode of interpretation could lead to potential and unnecessary conflict."

Commenting on the report Mr Jeff Rosenberg, president of the students' union at PNL, emphasized the CNAA's reservations about the site and difficulties of lack of space. Accommodation for students was a pressing problem, he said.

Dr J. Leicester, deputy director, said the PNL had a more cohesive look than a year ago. The machine was now ready to go and next term would be the testing time for the polytechnic.

Looking ahead, Mr Diamond, who hinted that a small group of governors would keep a close watch on decision-making in the polytechnic in future as a kind of cabinet, said there was a palpably different spirit in the polytechnic.

"It is a bit of a mystery to me why Lord Annan wrote his letter to *The Times* although he is free to express his views. But was he fully informed about all the difficulties we faced?"

New regulations will control future teacher training

by David Hencke

Existing teacher-training and further education regulations are to be revoked by the Government and replaced by a common system from today.

A new circular, 5/75, the Further Education Regulations, 1975, means the end of regulations governing the university-based area training organizations and lays the foundation for new regional committees.

No date has been fixed for the introduction of regional committees but the Government hopes that universities will continue co-ordinating in-service and initial training until they are established.

The teaching regulations which lapse cover the constitution and functions of area training organizations; the duration, standards and academic supervision of courses of initial training and the eligibility of students for admission for training.

The Government is amending schools regulations relating to Qualified Teacher Status. These will now include a person who has successfully completed a course for a Bachelor of Education degree or Certificate of Education or comparable qualification, of a UK university or the Council for National Awards which has been approved by the Secretary of State as a course for the initial training of teachers, and who has been accepted by the Secretary of State as a qualified teacher.

The circular says the Government is consulting groups on proposals made by the Council of Local Education Authorities for new regional machinery.

Functions of the new body would cover the work of existing Regional Advisory Councils for Further Education, advise on the provision of courses of initial teacher training and be responsible for the promotion, coordination and review of in-service training for teachers and an improved system of induction.

Tuition and board fees, which were prescribed under the teacher-training regulations for college of education courses, are extended to all courses which receive mandatory awards.

The cost of teacher-training courses between four and six weeks is now to be covered by poolable funds, which means that four or five-week courses will need DES approval.

Equipment grants under £2,500 will no longer require DES approval.

Finally, the 100 per cent capital grant, which previously applied only to Goldsmiths' College, is extended to all non-denominational institutions provided the grant is for a building which will not revert to denominational use.

'Enforcegrants for disabled'

by Frances Gibb

Mandatory grants should be available to disabled students who want to pursue a course of further education, the National Union of Students recommends in its submission to the Warnock committee on special education.

"It is not always the case that further education students receive a mandatory award, and maintenance awards are not normally available for 16 to 18-year-old students."

Yet disabled students often had to live in special accommodation away from home, or needed to pursue courses that did not merit a mandatory award. The additional cost involved could prove a barrier to a student's benefiting fully from his course, the NUS says.

It welcomes the additional grant to disabled students to help pay for equipment and other items required because of handicaps, but urges that it be increased.

Colleges which cannot immediately afford to adapt their buildings should at least try to provide the less expensive aids, such as typewriters, tape-recorders.

In higher education, the NUS hopes the University Grants Committee will ensure that programmes for improving physical access to universities and polytechnics will continue in the light of the recommendations in the Chronically Sick and Disabled Persons Act, 1970.

● The Council for Educational Advance calls for more supportive services for the handicapped in its evidence to the Warnock committee. There should be more in-service training for teachers in special schools and more trained, non-teaching staff to help them. Better care and services for the parents and families of the handicapped should be provided, it says.

£100 a head for education

The education services, libraries and science will cost each man, woman and child in Britain about £100 this year, according to figures revealed in Parliament recently.

By 1981, it is estimated, there will be at least one educational employee for every 26 people, with a total of nearly two million teachers, academics researchers and auxiliaries.

On both scales the growth in education has been enormous and is still growing. Spending on education, libraries, science and arts per head of the British population rose in real terms by £20 between 1970 and 1975 as against £8 for law order and protective services and £9 for roads and transport.

By 1981 a research team at the Department of Employment estimates, education will have added nearly 550,000 people to its payroll in 10 years. No other sector of employment will have grown so fast though health, with an estimated total of 1,340,000 employees in 1981, will come close.

By 1981 8 per cent of those in jobs will be in work associated with education.

Per capita public expenditure in the United Kingdom

	1974-75 £	Increase since 1970-71 at 1974-75 prices £	In cost terms
Defence	73	+4	
Trade, industry and employment	51	+16	
Housing	72	+37	
Law, order and protective services	25	+8	
Education, libraries, science and arts	99	+20	
Health and person social services	83	+18	
Social security	127	+20	

A-level passes cluster in pure science subjects

by Alan Cane
Science Correspondent

Pure scientists seem best suited to amassing large numbers of A-level passes while social scientists find it hard to pass more than one subject, according to Government statistics published this week.

They show that of the 18,880 pupils who passed science subjects including mathematics in 1973, 75 per cent achieved three or more passes—almost 20 per cent achieved four or more.

By comparison of the 7,970 pupils taking social science subjects, only 6 per cent achieved more than two passes. The greatest proportion, 70 per cent, had only one pass. Social science subjects are defined as: British constitution, economics, English economic history, general studies, geography, political studies, psychology, sociology and vocational subjects.

Of those pupils taking science without mathematics, more achieved two A level passes or more than achieved two A level passes or less, while of those taking arts subjects, fractionally more achieved two A level passes or more than achieved two A level passes or less.

With the artists, as with the social scientists, the largest single proportion of pupils achieved only one A level. Of the scientists, whether taking mathematics or not, the largest single proportion of pupils achieved three A levels.

The statistics also show that for every 17-year-old school-leaver going off to take a polytechnic degree course in 1972-73, there were six 17-year-old school-leavers going to university.

The figures also suggest that the polytechnics recruit a proportionately larger number of students from the state system. Of the total school-leavers who left the state system to go to university or polytechnic degree courses, 28 per cent went to polytechnics. The comparable figure for the grant-aided and independent schools was 20 per cent.

The statistics show that roughly twice as many girls left school in 1973 with one or more A level passes than in 1963. The improvement for boys was rather less, giving an overall increase over the ten-year period of about 70 per cent.

There were 416,000 school-leavers in 1972-73 of whom 105,000 had A level passes, about 15.7 per cent of the relevant age group. The results data show that ancient history, Latin and Greek top the list for passes as a percentage of entries; 94.2 per cent of all candidates taking A level Greek passed and of these almost a quarter achieved a grade A. Bottom of this list was British economic history where only 57.4 per cent of candidates passed and a mere 4.5 per cent achieved a grade A.

For the second year running there was a slight decline in the number leaving for degree courses.

Statistics of Education Vol. 2, 1973, HMSO £3.00.

Edinburgh grant record

Research grants and contracts received by Edinburgh University during the year have totalled nearly £3m., making a total of £12m received during the past five years. The year's figure sets a record.

Chairman honoured

Sheffield Polytechnic's new £691,000 library is to be named after Sir Eric Mensforth, retired chairman of Firth Brown Tools Ltd and chairman of the governing body of the polytechnic since 1969.

Postgraduates to get up to 23 per cent more

Increases of between 20 and 23 per cent for postgraduate students' grants were announced by Mr Mulley, Secretary of State for Education, last week.

The main rate for students outside London will rise from £880 to £1,085, London students will receive £1,180 instead of £960 and students living at home £790 instead of £660.

Married women will receive the same grant as men and both men and women will be allowed to claim dependants' allowances. Supplementary allowances will be adjusted and disabled postgraduates will receive an allowance of £120.

The cost to the state of the new increases will be £3m. Postgraduate studentships are expected to cost £19,500,000 next year.

Rates of grant

1. The new rates compare with the following:

	1974-75 £	1975-76 £	Percentage Increase
London	960	1180	23
Elsewhere	880	1085	23
Parental Home	660	790	20

These increases are in line with those announced for undergraduates on May 20 and similarly take account of rises in the cost of living.

Sex Discrimination

2. Changes will be made to ensure there is no sex discrimination in the awards arrangements. These include:—

(i) abolishing the lower rate of grant for married women;

(ii) allowing married women students to claim dependants' allowances in the same way as married men but, in both cases, the allowances may be the spouse's income (subject to certain disregards).

Spouse's Contribution

3. The spouse's contribution introduced in 1974-75 will continue in 1975-76. It is assessed generally on the same basis as for undergraduates starting with a residual income (after various allowances) of £2,200. The arrangements will be reviewed later this year.

Dependants' Allowances

4. These will be as for undergraduates, i.e.:

	£
Spouse	380
First child	165
Second and each subsequent child	85*

*This takes account of the new rates of family allowance from April 1, 1975.

Each dependant's allowance will be abated in respect of his or her own or spouse's income (subject to certain disregards).

Disabled Students

5. An allowance of up to £120 per annum will be payable to any student who, as a result of a disability, is obliged to incur additional expenditure in connexion with his studies. This extends to postgraduates the provision introduced in the undergraduate arrangements in 1974-75.

Cost

6. The additional cost to public funds of these increases in maintenance grants is estimated at £3m. The estimated total expenditure (including fees) on postgraduate studentships (which are expected to number about 14,500 in 1975-76) each dependant of £160. The spouse's income may additionally abate other dependants' allowances which for this purpose will be aggregated.

SSRC to explore how Scotland reacts to oil boom

by Our Social Sciences Correspondent

The Social Science Research Council is to set up a panel to administer grants or research into the impact of oil developments in Scotland.

The establishment of the panel, which will foster new studies and attempt to improve contact between people working in the field, comes after the report of an investigating committee appointed in January found social science work on oil to be very fractional, with uncoordinated effort in parallel areas.

The new panel, which will work loosely under the aegis of the SSRC's new "research initiatives board", will provide funds for research in sociology, economics, anthropology or any other areas with a bearing on the social consequences of oil exploration off the coasts of Scotland.

With funds of up to £150,000 spread over four years the panel will not preempt all research in this area. Academics will still be free to apply to another subject panel of the SSRC for support.

The panel, which will probably be based in Glasgow and composed of Scottish social scientists, is a new departure for the SSRC. Its work is likely to be taken as a test of the more active organization of research recently begun by the SSRC.

'Pop' culture in poly's new degree

Cultural studies is the subject of the new BA honours degree course beginning at Portsmouth Polytechnic this October.

The course, which provides the chance to study the way in which modern British culture and society have emerged since the seventeenth century, embraces both "high" and "pop" culture.

English literature, history and sociology are the main subjects, with emphasis on the integration of these subjects. It is hoped students will suggest ways in which cultural development can be studied.

The first year involves the study of the methods of literary criticism, history and sociology, using both seventeenth and twentieth century material. In the second and third years students explore theories of cultural analysis related to post-industrial culture and society and popular fiction and mass media.

Students will present a dissertation on any related topic which may take the form of a video tape or

Universities expect rise of 2,000 in 1975 entry

by Alan Cane

All the signs now are that there will be at least 2,000 more students entering the universities in October 1975 than entered in October 1974. Because fewer leave than enter, there could be an additional 10,000 students next year.

This is the figure vice-chancellors have been quoting pessimistically for the past year in emphasizing the problems which continuing economies will cause; now it is clear that applications from home candidates to the Universities Central Council on Admissions are up broadly by 2 to 4 per cent.

This reverses the trend of the years since 1971, when total numbers of applications from home candidates have been falling.

It also seems clear that the increase in applications is larger than could be expected on the basis of age-group projections. The 18-year-old population is larger this year than last, but the increase in applications is proportionately greater.

Applications from overseas are also higher this year. The biggest surprise, when applicants seemed to be turned steadily towards vocational courses, is that the medical sciences—perhaps the most oversubscribed of all university courses—are showing a fall of about 1.3 per cent, which means about 1,000 applications less (applications are not equal to candidates because each candidate can make more than one application).

A further surprise is that there seems to be an upturn in engineering sciences—again against the trend. Applications for engineering seem to be up about 1 per cent—again an increase of about 1,000 applications.

Social sciences also seem to be up, by about 0.5 per cent. Other subjects—pure sciences, arts and vocational areas such as architecture—seem largely unchanged from last year.

Nevertheless, if the data for applications to all universities between 1971 and 1975 are considered, it can be shown that arts-based applications have risen by about 2 per cent, while science and technology applications have fallen by about 6 per cent. In the same period, applications for medicine rose by 69.7 per cent. The average figure for the increase in applications between 1971 and 1975 is 4.9 per cent.

A survey of individual universities by *The Times Educational Supplement* bears out the national picture.

● Surrey University reports applications jumping from 4,900 in 1974 to 5,700 this year, with applications for science courses up about 12 per cent and for French by nearly 50 per cent.

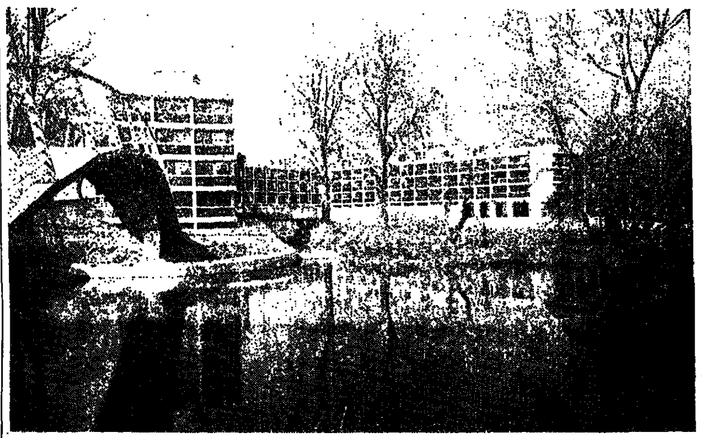
● Applications for science places at Birmingham University rose by about 1,000 although they remained the same in other subjects.

● Salford University showed an overall increase of 14 per cent with 15 per cent increases in chemical engineering, mechanical and aeronautical engineering (both 7.5 per cent) and 18 per cent in economics.

● Leeds University said their overall total applications were slightly down but the take-up of unconditional offers had doubled. The chief fall had been in the heavily oversubscribed areas such as medicine and law.

Experts on application numbers stressed this week that the figures at this stage should be treated with reservation, for the situation was fluid and changed daily. Nevertheless, there can be little doubt that numbers of applications are rising and that the universities will have to cope with large numbers of additional students next year.

One university administrator said he believed that reports of students turning away from the universities had been based on a misunderstanding of the figures.



Wolfson College, Oxford, was one of three university winners of the 1975 Royal Institute of British Architects' awards. Warwick's arts centre and Leicester's library were the other two.

Councils fear threat to poly control

by Mark Vaughan

Many local authorities feel that their control over the polytechnics and other higher and further education colleges is threatened by a new circular from the Department of Education and Science.

The Association of County Councils felt so strongly about it that they have sent the document back without any comments, which they had been asked to give, saying they did not see the necessity for a new circular. They have asked the DES for a special meeting to discuss it. Because of the current economic climate the association is to emphasize the authorities' need to maintain existing involvement in these institutions, some of which are considered "profligate".

The polytechnics on the other hand, while expressing reservations about the large number of institutions which the circular refers to, tend to welcome the bias it has towards them.

The circular is still confidential and in draft form but is certain to be published later this year with possibly a few changes. It gives guidance on the government and conduct of polytechnics and other institutions of higher and further education, and covers some 500 colleges as well as the 30 polytechnics.

A number of local education authorities are particularly annoyed at the DES's change of emphasis in the composition of governing bodies. One local authority spokesman pointed out that former notes of guidance allowed the l.e.a.'s to have into being just under half the membership of the governing body, the remainder being made up by the polytechnic staff and outside interests. The new draft confirms the view that local authorities should still have a minority of members, but advocates "about one-third of the total".

The spokesman said local authorities were also likely to object strongly to another clause which they felt gave greater autonomy to the larger institutions, particularly the polytechnics.

The draft says: "The powers specifically designated to the governing body of the institution should be subject only to the other provisions of the articles (of government) and not to the authority's standing orders in general."

Since local authorities have their own rules and regulations for governing their financial procedures, many of them are not going to happily accept the department's suggestion that one of their own institutions—a polytechnic for example—should not be subject to the authority's standing orders. "A substantial number of l.e.a.s are going to resist any further inroads into their control of their own institutions", said the spokesman.

It is also known that a number of authorities have taken exception to the draft being sent to teachers' organizations before it has been finally agreed by the department.

Some observers see the new circular as a "holding operation" by the DES, or a reminder to the new education authorities which came into being last year. There is no doubt that many chief executives and non-education officers have taken corporate management (which for many, arrived in April last year) as meaning they should have a much greater involvement and control of their education service.

"They treat education as if it were a branch of the sewage department, and start doing things which the old education officer would never have dreamed of", commented one polytechnic head of department. "The DES knows it has a responsibility to stop this happening, and this circular is simply reaffirming the Weaver principles."

A spokesman for the committee of Directors of Polytechnics said: "A document of this kind can't possibly cover the whole range of polytechnics and other institutions of further education. We feel that the problems of the polytechnics are rather different and that this should have been recognized in the draft."

One polytechnic director said he felt the draft could go far enough in openly supporting the polytechnics. "Many of us feel that there ought to be a clear statement giving freedom to the polys to make their academic plans." He added that one-third l.e.a. membership of a governing body was "unnecessarily high". In London it is about one-tenth, and it seems many polytechnics would like to see a compromise between the two.—*TES*.

Pioneer federal plan approved

The Government's approval of Roehampton Institute of Higher Education this month could pave the way for more flexible federal solutions to college of education mergers.

A letter from the Department of Education and Science to the Institute shows that the Government has agreed to the more contentious constitutional proposals put forward by Roehampton, which will allow its four constituent colleges to keep a large measure of autonomy.

Previously, the DES had been insisting that the institute should virtually be one college and that a loose federal arrangement would be unacceptable.

The merger creates a new federal voluntary institution consisting of Digby Stuart, a Roman Catholic college; Whitelands, Anglican; Southlands, Methodist; and Froebel, an undenominational college.

The DES has agreed that each will keep its own principal, an academic board and will have wide control over accommodation, student entry and appointments.

The institute will be offering new degrees validated by London University from September. These will include a bachelor of humanities degree, developed on a course unit basis, to allow a wide choice. A Diploma of Higher Education will also be offered.

'Rethink siting of industry'

Academic institutions should play a significant part in the location of industry, Professor Peter Hall, of Reading University, has advocated. He told a special seminar organized by the Warrington New Town Development Corporation that instead of industry being linked to coalfields, ports and the main markets it should be sited near universities where information needed for scientific, technical and managerial development is available.

Professor Hall maintained that this trend was already well established in America where firms, especially those connected with the service industries and various forms of research, were choosing locations near universities and libraries.

The ideas put forward by Professor Hall were highlighted in a three-page advertisement in last week's edition of *The Economist*, which claimed that Britain's closest parallel to the American situation was Birchwood Park campus development in Warrington.

Here, said the advertisement, the headquarters of the United Kingdom Atomic Energy Authority were already sited employing 4,000 people from Warrington. It added that the 75-acre landscaped site, soon to have golf and conference facilities, was at the centre of a circle containing Britain's highest concentration of technically oriented learning.

Ulster professor to head Australian centre

Professor Malcolm Skilbeck, director of the Education Centre of the New University of Ulster, is to be the first director of the Australian Curriculum Development Centre in Canberra, a statutory body set up by the Australian Government.

The new body, which is influenced by the development of the Schools Council in Britain, will support research, field development, and the provision of advisory and technical services from pre-school to post-secondary school level. The centre will be a national agency which will coordinate schemes at state level and also act as an inter-

Chamberlain papers go to Birmingham

A unique political archive covering 75 years of British history was completed when the last of the papers left by leading statesmen Mr Joseph Chamberlain and his two sons Austen and Neville, were handed over to Birmingham University library this week.

The items include papers relating to the declaration of war in 1939, the Munich crisis, the Locarno pact and Irish home rule. Letters from Mr Joseph Chamberlain to his children at school were also handed over. The whole collection will be available to scholars engaged in relevant

University expansion worth two steelworks

by Frances Gibb

The planned expansion of Sheffield University from its present student number of 7,000 to 10,000 by 1981 would attract to the city between £20m and £26m, the committee on the expansion of the university notes in its report published this week.

The expansion of higher education could be as advantageous to Sheffield as the establishment of two new steelworks, it says. University salaries and wages, which account for about 70 per cent of the university's turnover, would be mainly spent in Sheffield.

"By the early 1980s, the planned expansion would add about £8.5m annually to the present salaries and wages bill of the higher education sector—equivalent to the payroll of a large new steelworks."

The committee's findings come after more than a year of gathering evidence from members of the university, the city, the media, local government, educational, trade and other organizations, local residents' groups and individuals.

It was set up under the chairmanship of Dr W. D. Pugh, magistrate and former managing director of the English Steel Corporation, to "investigate and report on the effects of student numbers on the university remaining constant university convocation had passed a motion advising no further growth.

It concludes that demand for university places for graduates and for research are sufficient to sustain further expansion of the university to 10,000. It would then be in a better position academically and physically to expand further or not as the national situation demanded. If student numbers remained constant, the community as a whole and the university in particular would be poorer.

The arguments on academic grounds for expansion are that a proper balance of subjects cannot be achieved until there are 10,000 or more students. "A static situation may well lead to stagnation, as new developments can only proceed if accompanied by contraction in other areas."

Considerable expansion is envisaged in the areas of adult education and post-experience courses. In this, universities and polytechnics have complementary roles, it says.

A growing feeling that an adequate university education could not be achieved in three years might lead to a growth in postgraduate numbers and to longer courses. To meet these possibilities, options had to be kept open by planning for growth.

The report says that present buildings provide for around 7,000 to 8,000 students. It emphasizes that cannot be expected to provide new buildings while present ones are not used to capacity.

It warns that academic standards and morale would be threatened if expansion proceeded without the appropriate increases in staff. The UGC seemed to match resources to the size of the university and arguments that the university will be better off in terms of resources if it does not expand were invalid.

On the social effects of expansion, the report concludes that the local community need not be adversely affected, but urges that each development be undertaken only after the most scrupulous appraisal of its consequences.

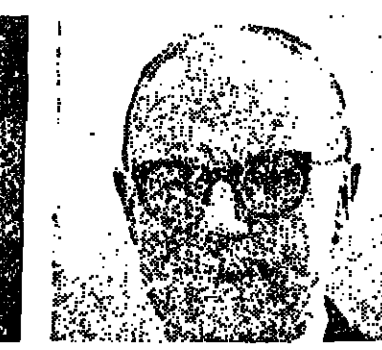
One of the major fears about the effects of expansion is scarcity of student accommodation. The report emphasizes that the university plans to buy no more than 50 houses a year—a small proportion of the total stock. The university is in a position to buy some large properties which otherwise would be converted for multi-occupation or use as offices.

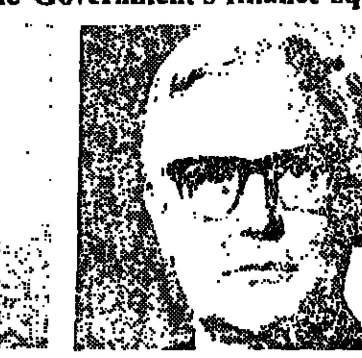
The housing problem might be eased by growth in the number of mature students who usually live locally, and by spreading student accommodation in a wider radius from the university, it suggests.

The report has been received by the council of the university but will not be approved formally until comments have been received from the university senate and discussed

The THES survey on how universities have taken the Government's finance squeeze


Mr Charles Carter.


Sir Samuel Curran.


Mr Frank Thistlethwaite.


Sir Fraser Noble.

A story of relentlessly deteriorating standards

Set down on paper the answers are deceptively bland:

"The position here is that in the past year we have 'saved' 105 academic posts and cut our recurrent grants by over 6 per cent in other areas"—Dr R. B. Hunter, vice-chancellor of Birmingham University.

"Academic estimates, after spending accumulated reserves, were cut by 4 per cent, student intake figures were revised, and the number of new faculty posts authorized for 1974-75 was reduced from 22 to 13½."—Mr Frank Thistlethwaite, East Anglia.

"Academic posts vacant on June 16 (including part-time)—58. All other posts (including part-time)—81. It is reasonable to assume that the number will increase."—Dr Henry Miller, vice-chancellor of Newcastle University.

But what is disclosed in answers to a survey by *The THES* of the effects on universities of Government policy in the past year, is the story of a relentless deterioration of working and physical standards in all areas of university life.

Since salaries account for up to 75 per cent of budgets, a cut of 6 per cent, as at Birmingham, amounts to a 20 per cent cut in the budget at the disposal of bursars and is bound to hurt.

It has. Answers from 20 vice-chancellors, while never angry, show a strong vein of impatience and resentment about the frustration of coherent planning by Government stop-go policies, as well as a fear that academic standards will be eroded if they continue.

Over the past year most universities have been forced to economize on the maintenance of grounds and buildings, departmental and library grants, books and periodicals, printing and publishing, heating, lighting, cleaning and telephones, entertainment and ceremonial occasions, links with overseas universities, industrial liaison and even gardening.

Durham, by reducing the weight of paper used to print the university prospectus, saved 2p a copy on postage on the distribution of 25,000 copies.

Several universities have been forced to cancel new developments that were planned for the new quinquennium: York is not going ahead with its seventh college; Exeter has lost a new computer building; new schools of psychological sciences and electronics have been put off by East Anglia; and City will not get a new building for its oversubscribed department of ophthalmic optics and visual science.

Some new developments are going ahead nevertheless, especially when they are financed from outside sources or from the University Grants Committee. At Hull, for instance, Mr S. R. Dennison mentioned a new computer, the Wolfson laboratory for gerontological research, the Institute for Modern Dutch Studies, and a possible degree in nursing.

Several universities were worried about residence. Among the comments were:

Stirling: "A problem arising not from recurrent grant allocations but from high interest rates. This does not affect all institutions equally but very adversely affects those with a high proportion of loan financed residence. Stirling, because of its vintage and its campus organization, is very badly affected.

"All its residences are loan-financed and by the end of the current year deficits of about £250,000 will have accumulated, in spite of charging reasonable rents and utilizing the maximum in vacation."—Dr W. A. Crammond.

Edinburgh: "I have always supported a policy of encouraging students, where possible, to live at home. Scotland has maintained this tradition very much better than the rest of the country. But surely the responsibility for finding places for students to live in is by no means with the university alone; some responsibility must surely rest with the local authorities and indeed on the students themselves, now that they are by statute fully responsible people at the age of 18.

"We in Edinburgh have taken some steps towards coordinating efforts of the universities and other institutions in this field".—Professor Sir Hugh Robson.

Durham: "The section of the university in Durham which has probably suffered the greatest problems, and which gives us the greatest concern for the future, is the position of the colleges. Durham provides residential places for 75 per cent of its students and being small cannot afford subsidies when the level of student residence is as high as this, since the amounts involved would be very considerable in proportion to the university's total expenditure.

"The fact that the Government has not been able to fix the student grant at an economic level which would enable them to pay an economic cost for the services they receive has meant that the colleges here have been faced with economic problems which have resulted in immense cuts in services and a drain on resources of every kind."—Mr Ian Graham, registrar and secretary.

Several comments were made about the series of speeches by Lord Crowther-Hunt, Minister of State for Higher Education, not all of which disagreed with all the points that the Minister has made. They included:

"I have been conscious for some time that the relative lack of co-ordinating machinery between the two sectors of higher education is under any circumstances wasteful and under present circumstances indefensible. The machinery for co-ordination on the other hand is extremely difficult to devise."—Mr James Drever, Dundee.

"My main impression on reading the speeches by Lord Crowther-Hunt is that a good many universities have been engaged for a considerable time in attempting to do almost everything on which he has spoken where it can be done with any assurance.

"Much of what is said about relevant education depends on reasonably accurate manpower planning and this is still anything but a science. On the other hand we have never failed to place our graduates in employment very soon after graduation so our own methods of anticipation of demand for graduates have so far proved successful.

"Many of the problems faced by universities and polytechnics come from the rather hasty introduction by government of a second sector in higher education."—Sir Samuel Curran, Strathclyde.

"Lord Crowther-Hunt seems to be reviving rather old arguments, perhaps without realizing how much discussion there has been of them already.

"I am sure we should look again at the various economy measures, and may get a little more from them: but it would be unwise to assume any large economies unless the Government is prepared to grasp the nettle of redundancy.

"Lord Crowther-Hunt's ideas about manpower planning seem to me very much over-simplified, though I agree with him that in present circumstances Government should show a positive interest in forms of education relevant to our economic future."—Mr Charles Carter, Lancaster.

"Lord Crowther-Hunt's suggestions of cooperation and collaboration between universities and other institutions do not fall on deaf ears.

"In respect of manpower planning, it is certainly true that students should be encouraged to match their talents to the nation's needs but this, like so many other generalizations, requires to be taken with several grains of salt. I think it is an over-simplification to suggest that scientists can do all the jobs that arts graduates now have.

"It is all very well to do large calculations about staff/student ratios and I am sure that a certain amount could be achieved by means of cooperation between universities, but it still remains really difficult to substitute lecturers, for example, in Greek and Sanskrit, who are not likely to have many more students, for lecturers, say, in mathematics, physics, or chemistry.

"On postgraduate work, all I can say is that the question of whether we have the right balance of advanced work is one that is receiving almost constant attention."—Sir Hugh Robson, Edinburgh.

Other, more general, comments concentrated mainly on the difficulties of planning when policy changes so frequently and on the dangers now facing the universities.

Mr Geoffrey Lockwood, registrar and secretary of Sussex University, made several personal and "impressionistic" comments:

that their sizable accommodation and catering accounts should balance whereas the income into those accounts (drawn from student maintenance grants) has not kept pace with inflation. In other words, the requirement is tantamount to a request to the universities to take a larger proportion of each student grant which is clearly a recipe for discontent and unrest.

"When that unrest occurs, it rebounds on the universities and their reputations.

"I think many people in universities have felt that the institutions are on trial within Whitehall with no way of putting up a public defence. Lord Crowther-Hunt's recent speeches would seem to be pronouncing the sentence without a defence having been put.

"Two comments as someone who spent a great deal of time developing and publicising concepts of planning and management in universities:

● "Any talk of planning no longer causes either the fear or the hope which it used to; the response these days is more likely to be laughter. I am not bemoaning the fate of planning since that fate stems from the state of the economy over which we appear to have little control, but I would make two points arising out of it:

(a) "The devolution and participation which came with planning in some universities has also gone with planning. The timing and speed of change external to the university (eg, in the student number plans for 1976 and 1981) mean that it is physically impossible to bring participation to bear on the university's responses. It is worthy of comment that the Government and Lord Crowther-Hunt in particular are politically committed to devolution and participation.

(b) "In the absence of planning, universities are being asked to change with little external perception of the internal rigidities. Most outsiders seem to think that rigidity is simply a lack of will within the universities and they fail to see that tenure, the research role, etc, are very real constrains on the switching of resources.

● "The rate of inflation has outdated the techniques used in the planning of the resources allocation to and within universities."

At East Anglia, Mr Frank Thistlethwaite talked of the destruction of plans for growth and the consequential academic imbalances, as well as the time and effort wasted by repeated estimating and reestimating procedures necessitated by Government policies over the past 18 months.

In common with several over vice-chancellors, he also pointed to the need for realistic student grants to make it possible for accounts that were supposed to be self-balancing in fact to balance.

Sir Fraser Noble (Leicester), added: "What we are confronted with at present is the need to think about probable future growth at the same time as we are having to give the most urgent and anxious attention to retrenchment, while we are totally uncertain about the resources that will be provided for the final year of this quinquennium.

At Strathclyde, Sir Samuel Curran said that staff morale was the matter of most concern.

"It seems to be assumed that universities are in some way proving inadequate and no clear indication of the inadequacies is given, while the true facts of the situation would reveal that universities are playing an important part in economizing and are willing to hear how they can do better at a time when they are still growing.

"The contrast between the criticism that is often expressed in our own country with the high standing of our universities in many countries overseas seems to show that we are failing to recognize that the university sector of our society is playing a most worthwhile role.

STUDENTS!

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Giving to oil rich may deprive poor

by Laura Kaufman

The poorer developing countries might be damaged by contracts to provide educational services for oil-rich countries, university staff said at a conference on universities and overseas development.

Several delegates attending the conference expressed fears and objections to the new Paid Educational Services Scheme (PES).

During discussion Mr H. Dickinson, of Edinburgh University's school of engineering science, said that for political reasons he would refuse to work within the scheme. He complained that the Open University was committed to it yet many of the staff were very disturbed and would not wish to go to countries to which they were unsympathetic.

Dr M. J. B. Lowe, deputy registrar at Strathclyde University, said: "Working with OPEC (the Organization of Petroleum Exporting Countries) is bound to reduce the pool of people available to help poorer countries. This view was shared by Professor R. W. Steele, principal of the University College of Swansea, who said: "I hope we will not get overwhelmed by the oil-rich countries and forget the underdeveloped countries."

One delegate complained that the scheme would "turn academics into mercenaries" but this was dismissed by another as "nonsense".

Dr Colin Adamson, director of the Polytechnic of Central London, argued that contracts with rich overseas countries could generate a surplus which might be used to help poorer countries.

Dr P. A. I. Tahourdin, assistant director-general of the British Council, said later that there were spare science places in university departments and that, provided PES did not grow too fast, the poorer countries would not suffer.

25 per cent fall in job advertising

The volume of advertisements for posts in universities, colleges and polytechnics from January to May fell by 24 per cent compared with the same period of 1974, according to measurements by the marketing department of Times Newspapers Limited.

Measurements of three national daily newspapers, two national Sunday newspapers and three weeklies showed that the volume of British university advertising fell by 43 per cent compared with 1974. Overseas university advertising was down by 3 per cent and polytechnic advertising down by 16 per cent. Advertising by colleges of education increased by 4 per cent.

Against the trend, *The THES* increased its share of the total advertising market from 22 per cent in 1974 to 34 per cent in 1975. Its percentage share of the market is now: British universities: 42; overseas universities: 34; polytechnics: 43; colleges: 18.

Archaeology honours offered at Bradford

An honours degree course in archaeological sciences has been established at the University of Bradford. The four-year course, to start in October, includes a year of professional training and is aimed at producing a new type of archaeologist, versed in the relevant sciences.

Mr Price to be PPS

Mr Christopher Price, MP for Lewisham West, and Mr Bryan Davies, MP for Enfield North, have been appointed parliamentary private secretaries to Mr Fred Mulley, Secretary of State for Education. Mr Davies, sponsored by the Association of Teachers in Technical Institutions, will have special responsibility for the arts.

Author please

We would be grateful if the author of the poem "The Academic Hier-

Don's diary

Do you read me?

Vacation? Vacation! Here we are now four weeks after the end of term, when those jealous of the presumed easy life of the university lecturer presume further that vacation means four months' holiday.

At the beginning there was the round of part one marking, and remarking, followed by examiners' meetings and tutors' meetings and the assessment committee until the results were finally published. And the list of those required to resit or referred in one or two papers only serves to remind us of the further round to come, in September, with again the need—a critical need perhaps in a marginal case where a person's future might be at stake—to re-read papers and agree marks and go through the round of meetings.

In between, the theory goes, there is time to do research. The first problem, however, is to catch up on all the material which has piled up on the desk during the round of examinations, especially when this has involved marking extended essays of up to 8,000 words for part two students, as well as the conventional examination scripts.

The idea of the extended essay appealed to both students and staff when it was introduced—a chance to follow up a topic in some real depth, not to be bound by syllabus and so on—but now it seems that some evaluation and consideration is needed.

Not only is the project demanding for students, but courses have tended to call for extended essays, and work tends to be neglected while the extended essay dominates the students' concern.

And if writing so much has become a strain, what about the reading of it all? Forty or so extended essays either first or second marked, and some reconsidered to try to reconcile marks, the same number of finals papers . . . and then the part one round.

Unfortunately, publishers do not take any account of all this; colleagues seem to be writing slightly fewer letters, and one can quite understand why, but publishers still shower the papers down through the mail, and the journals do not have any "natural breaks".

Of course, there is some attraction in trying to find some well-written material, for although a number of students do produce good pieces of work, the general standard of writing is still disappointing. This, too, seems a serious issue.

Do we fail to "teach" our students, not in the sense of passing to them a body of knowledge (if that is what teaching should really be about anyway), but in making sure that they get any idea of the process of learning for themselves, seeking out information, evaluating it, and writing it to show what they have done and how? Of course, it is now respectable (just) to be concerned about ensuring that teachers are "trained", but perhaps we should ask whether we can assume that students know how to learn.

It still appears to be the dominant ethos of the Senior Common Room that these issues do not need to be raised; perhaps it is because those occupying the armchairs went from school to being good students, and on into graduate work, and were recruited—or perhaps slipped into—the profession.

They do not need to question the transitions which need to be made at each stage, but—at the very least—a few years' experience have led me to wonder whether some attention should not be devoted in the first year of university courses to making sure that students can "learn", that they know the various ways in which they might be expected "to read" books and articles, how to make the best of their reading, and—above all—how to present the fruit of their labours by participating in seminars, reading papers and writing pieces of all lengths.

Rate for the job

If we are not talking to ourselves—and it will be interesting to find out if anybody is out there—the faculty committee on the training of university teachers will be raising these issues next session, along with a continuing attempt to explore the dynamics of the seminar (the result of another of those "vacation" meetings).

But the dominant talk in the SCR is not along these lines. It is about salaries.

Once again the questioning as to whether there is any news, what the likelihood is of any eventual outcome, and what the Government are likely to say, has reached a pitch of nervous obsession. I thought it was all over when the Part 1 settlement was announced by the arbitration, with only the final details to follow—the question of a percentage point here or there. But it seems that members of Parliament and university teachers are the two groups to be caught by every pay policy over the past five years.

I wonder how we expect MPs to do a proper job on an insufficient salary when they are supposed to be acting on everybody's behalf in keeping check on the activities of a vast governmental machine. If there was ever a cult of "amateur" professionalism in British public life it was as much in Parliament as in the Civil Service, and it is hardly surprising that the results are unimpressive when we try to do the job on the cheap.

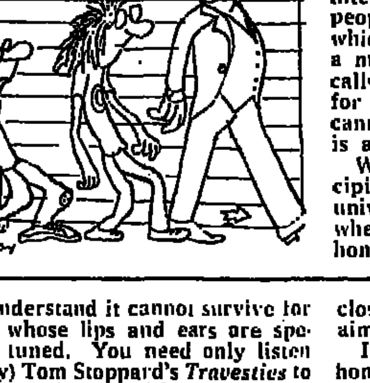
No doubt some academics would wish us to give a lead (I have yet to hear whom it would impress), and a few probably maintain the old tradition of unconcern for worldly affairs. The majority, unfortunately or fortunately depending on your point of view, seem to be in touch with the movement of rates and the weekly shopping bills, and seem singularly unmoved by the call to rally to the cause and make a sacrifice for the good of the country. . . .

Degree day

The university as an institution will, naturally, have to make some economies. It was, no doubt, with such concerns at the back of his mind that the chancellor, Jo Grimond, took the opportunity of his speeches at congregation to try to get people to think about some of the issues involved. He was widely reported, but probably equally widely misunderstood.

Judging by the comments reported from around the university, those who were listening were somewhat shaken, and—if it were possible—made to feel even more despondent. Whether they were made to consider how the problems of the present economic crisis, as it affects universities, should be tackled positively, rather than just as a series of reactions to continuing threats and pressures, is much less clear.

The clearest impression of degree day was the remarkable transformation of "students" into "graduates". Those casual, if not scruffy, figures who had been around for three years (only three years? one pinched oneself in certain cases) suddenly appeared with smart suits and clean shirts, smart outfits and new hairstyles. Mums and dads were in tow, and it would be fascinating to do a study of how they interacted with their erstwhile student colleagues when they met each other in their new disguises—if they could recognize each other.



Things fall apart

This looks like being a quiet summer, certainly in a physical sense, as compared with the summer of 1974. Then the vacation began with cracks appearing in the walls of one of the university's buildings. Indeed, it was far from quiet as, with ever sharper and more ominous rumbles and snaps, the rooms had to be evacuated and the area was roped off.

In the beautiful sunshine of early July, quite a camaraderie developed as a varied selection of staff came out of their various offices and colleges and watched first the movement of the building, speculated as to its cause, anticipated the spread of the phenomenon, and then watched the demolition men get to work when it was decided that the buildings could not be made safe again.

At least the new university can be put in the perspective of industrial history, for the cause of the subsidence was generally thought to be the crumbling of a tunnel which runs directly under the site—the first railway tunnel, built to carry the early Canterbury to Whitstable line. Perhaps more care ought to have been taken with the institution of the new generation of universities in the 1960s?

Economics notes

Certainly then "the disintegration of the university" was regarded as having a physical reference. All that seems to be happening this summer is the continuing sitting of committees considering the university, its past and its future. And, inevitably, an economics committee.

There are already little notes being circulated asking for the husbanding of our resources. No doubt others will go round asking us to turn out lights as much as possible. I wonder if they will calculate whether the saving would be greater to have fluorescent lights switched on and off regularly, or just to leave them on all the time?

Certainly, the injunction already received to economize on envelopes and re-use them and paper as much as possible should not raise too many objections. Perhaps it is the circulars themselves which we are now asked to turn over and use for rough notes which should be most carefully considered in the first place?

But one wonders about the long term effects of some economies. It is proposed, for example, to cut down the number of telephone extensions by having shared lines, yet how much this will cost in terms of interruptions to teaching when two people answer a call on the line which they share, when one is taking a message for a colleague and has calls interrupted by external calls for the other half of the pairing, or cannot make a call because the line is already in use?

Will economies of this nature precipitate a further move to a non-university, a set of casual offices, where all the staff have studies at home only appearing to do their teaching and then disappearing again?

Economies in the short term could be very costly in the long term, and the universities can only seem to react to the financial squeeze upon them, so that reductions in staff are made by non-replacement and there is no chance of a positive, forward-looking recruitment policy. It is hardly surprising that the economies which are suggested and made arouse at best opposition, if not hilarity. At the very least, there is bound to be some disruption.

Think Marxist

Disruption and universities seem, unfortunately, to have become intimately connected in the public mind. Perhaps now a student generation has ended, and there will be a shift of opinion and attitude. Certainly, if there has been any noticeable development over the last session it has been the emergence of a new attitude among the good old liberals who used to be swayed on issues. Now they seem to have much less patience, and to believe in "authority". Perhaps this will not matter, if crises can be avoided; otherwise there could be trouble in store with a hardening of positions on all sides.

Certainly, divisions will continue over salary matters. The AUT must be extremely grateful that its policy of holding up examination results had the (presumably desired) effect of speeding up the arbitration announcement and was not put to the test. Now there will need to be some hard thinking.

Quite clearly, however, the university teaching profession will have to asked how "professional" it can continue to be. At the very least, from a supposedly thinking group—that is part of what "dons" are supposed to do, I believe—the first reaction of a strike was a little unimaginative. No doubt, nobody had ever thought that such action would be necessary, and the policy was the first thing that came to mind.

Now there is time to think, and perhaps some alternative courses of action might be prepared, which will not cause difficulties within universities and to the students whose continued existence is so vital (the UGC's words have not gone unheard on the need to maintain and increase student numbers—certainly a critical task for those involved in admissions this summer).

Flooding the civil service with applications, withdrawing from outside commitments and so on: perhaps we could learn from some students (more imaginative than our own?), the Parisian students of 1968 who created that masterpiece of modern culture, the slogan: "Je suis marxiste—tendence Groucho".

Hannan Rose

The author lectures in interdisciplinary studies at the University of Kent.

Keeping up with Old High English



DAVID MARTIN

You can blow up St Paul's and pull down a Georgian square. You can hack the Pietà in St. Peter's and sell your art "treasures" to American millionaires. You can give the gardens of Stourhead entirely back to nature. But you can't lay a finger on Schubert's "An die Musik" or give the Andante of Brahms's Double Concerto to rust and corruption. It does not matter how I hack away at the "48" because by turning a switch "Bach" becomes as perfectly alive as he was in the 1720's and 1740's.

There was a time when music was the most fragile and discontinuous of the arts. We have the letters which Abelard wrote to Heloise but not his songs. Since music was first recorded, and much more now that it is put on record, music really has triumphed over time.

Measure has become Immortal. You can no more hijack, hack, forbid or depose the *Jupiter* or the *Emperor* than you can proscribe or hijack Euclid. There may be alternative musical languages just as there are deviant logics, but the catholic language of sound is as untouchable as it is intangible. Others "abide our question": music is free.

The real danger of corruption affects languages more particular, local and artificial than the language of music. As the universe of music expands it grows more certain but as the universe of English expands it disappears into a black hole. The Welsh and the Irish and the Scots blame the English for its destructive imperialism but the triumph of English may easily be its downfall. A great language can die on the lips of 500 million people.

I don't mean that somewhere, someday, on the west coast of Africa perhaps, some new mutated variant of English may not evolve which is ebullient, vigorous and adaptable. Nor I do mean that Old High English

as I understand it cannot survive for those whose lips and ears are specially tuned. You need only listen to (say) Tom Stoppard's *Travesties* to recognize that English can still sustain the most brilliant exploitation. It can be done.

My worry is that an allusive, ironizing and musical rhetoric will be decreasingly accessible. Tom Stoppard can continue to appeal to a diminishing enclave but he and his audience depend on the availability of Old High English. As things are going at present Old High English is for the rubbish dump of history.

The culprits are the clerks. As usual they have been treasonable. They have simply stopped teaching and using Old High English. They tell me children cannot take it any longer and you cannot stuff it down their ears if they do not want it. So the teachers of English—some of them—collude with the self-accelerating spiral of linguistic deprivation. Nurture conforms to what children lack by nature, and education succumbs to the given.

Since when has education been a capitulation to what is already possible? Only the other day I was told that English poetry could not be taught until the age of 16, which is tantamount to saying that only those predestined by background and unusual talent to survive the "educational" process up to that point should graduate to the serious business of education. I don't mean that English is the only serious business of education, but a sure and subtle command of the

close to the heart of what school aims to provide.

I am having the point hammered home by the fact that people get me wrong. The literate editor of this newspaper once gently warned me that irony is a dangerous weapon. At a conference recently I was told that only a proportion of my American audience could follow the argument because it depended on a kind of European rhetoric to which most *academics* had restricted access. They heard what I said but did not know what I was saying. They were, as a friend put it, "honorary Japanese".

More worrying still, a sensitive and clever producer in Radio 3 once hinted that I assumed too much. He said that I could be taken in several different senses, which was exactly what I had hoped. On another occasion I referred to Richard III and Housman and was told that I was being "rather literary". I agreed. I was proud of it. I had worked hard for years at just that, only to find it was not a virtue. And I fear my producer may have been right.

Shakespeare thought that neither marble nor the gilded monuments of princes could outlive his "powerful rime". It had not occurred to him that by the test of popular accessibility references to his "powerful rime" might be thought "rather literary". The little switch that makes Bach privately immortal also makes powerful rime perishable. Perhaps George Steiner really is right in contending that we are

and that as our hi-fi racks expand so our libraries contract.

One must not knock Radio 3: its producers are, after all, co-opted members of the board of cultural guardians. I would rather blame the clerks, the politicians, not to mention certain clerics. Bernard Levin recently did a splendid piece on the joint rape of language and veracity perpetrated in a speech by Callaghan.

It is not that you want Churchillian rhodomontade but only a vigorous, clear and resonant speech. Compare Cromwell, Richard Price, John Bright and even Asquith with Benn and Wilson and you have a measure of a tradition's decline. Or else just read what the liturgical reformers have done to Cranmer and the Bible and you can see how the professional guardians of the Word have conformed to what John Vaizey has called the literary standards of the Gas Board.

Before I become too self-indulgent and Spenglerian I will end on a hopeful note. Contemporary children's literature is the most sensitive and mythologically and historically rich ever provided for the young. Read Joan Aiken, Alan Garner, Peter Dickinson, Nina Bawden, Madeleine L'Engle, John Christopher and Susan Cooper.

There is only one snag. It mostly reaches those already attuned to the literary and historical imagination. With the capitulation of school the deprived are left free to explore their deprivation. "To him that hath . . ." and I trust I do not need

LETTERS TO THE EDITOR

Pay scales

from Dr K. J. Heskin

Sir,—The comments on my letter (*THES*, July 4) reveal some interesting points.

It is clear that there is a vocal and powerful lobby in the AUT for the preservation of the differentials between senior and junior academic staff. They must now be feeling fairly pleased with themselves.

Edward Hughes' myopic observation that today's lecturers are tomorrow's professors will give little comfort to those unfortunates at the bottom end of the scale who, contrary to Professor Birch's anachronistic assertions, may well be struggling desperately to look after dependent wives and children. The unfortunate truth in these times of contraction and austerity within universities is that today's lecturers are tomorrow's lecturers.

I agree with Professor Birch that more promotion grades are necessary to encourage the industrious, particularly in the age range he mentions. I also agree with Edward Hughes that Bill Wallace has worked very hard for the AUT and I would not wish it thought that my remarks were directed personally towards him; rather they illustrate, from my own experience, the dilemma the AUT finds itself in a situation where lecturers need strong and unequivocal trade union support.

However, I find it very hard to believe, given academics' penchant for discussion, that no one was prepared to comment upon this fundamental issue of AUT loyalty. It reflects sadly upon the profession.

Finally, I am relieved that Mr Ribbons spared us the embarrassment of a detailed reply, since the figures he quoted, indeterminate as they were, are as damaging to his argument about numerical strength as they are irrelevant to my argument about influential strength.

Yours faithfully,
K. J. HESKIN
School of Biological and Environmental Studies,
The New University of Ulster,
Coleraine.

Iranian students

from Dr J. D. Downing

Sir,—The liberty and academic freedom of Iranian students in Britain is currently being threatened by the Iranian embassy here, in particular by its secret police (SAVAK) activities.

First, pressure is brought to bear on Iranian students to inform SAVAK against other Iranian students for expressing opposition to the Shah's regime. This pressure includes bribery, threats against the student, and even threats against students' families. Academic freedom is impossible for Iranian students—of whom there are about 7,000 in Britain—under these conditions.

Second, a particular instance of these processes is the refusal to extend the visas of five students because of their public comment here against the treatment of political prisoners in Iran. This obviously affects their capacity to continue their courses here. One such is Mr M. Kalantari, of the School of Oriental and African Studies, in London University.

Third, is the case of 21 Iranian students who currently face trial for conspiracy to trespass, for their non-violent sit-in in the Iranian embassy (on Iranian soil) earlier this year.

Their case presents an odd contrast with the absence of punishment of Ukranian students who staged a similar protest in the Russian embassy.

I therefore address a public appeal to the Committee of Vice-Chancellors and the Committee of Directors of Polytechnics to exercise whatever influence they can (1) against the developing role of SAVAK in British higher education; and (ii) against the barbarous retribution which awaits the 21 students as the result of the possible decision of a British court of justice, on the *criminal* charge of conspiracy to trespass.

Yours faithfully,
J. D. H. DOWNING,
Chairman of the Council for Academic Freedom and Democracy,
Kings Cross Road,
London.

University reform

from Kathryn Rowan

Sir,—Of the eight suggestions put forward by Professor Hammerton in his letter (*THES* July 11) the first five comprise a realistic attempt to deal with some of the implications of the end of university expansion, but the final three cannot be allowed to pass without comment.

Firstly, Professor Hammerton fails to explain his selection of English and philosophy as the subjects to be axed at undergraduate level. Why not history or psychology? Can it be argued that some subjects are more easily self taught than others?

Secondly, since Professor Hammerton is preoccupied in his letter with possible economies it should be pointed out that the teaching of English and philosophy only at graduate level lengthens the university careers of those who wish to study these subjects, and so may prove more expensive than at present. The cut-down in undergraduate intake to compensate for this would lead to more money being spent on fewer people. Is the adoption of this principle justifiable?

Thirdly, with reference to his discussion on sociology, although it is generous of Professor Hammerton to allow that "it cannot be ruled out *a priori* that there will never be any useful or illuminating outcome of such studies", the utilitarian thread that runs through his argument does damage to the real problem that lies behind it. This problem is central to the status of sociology and can be posed in two interrelated questions:

- What is the purpose of sociological study, or, what is the purpose of the conceptual and methodological exploration of theories of society?
- Is it possible to assess sociological worth from a utilitarian point of view?

In response to the first question the aim of sociology should be to induce in the student a critical awareness of society and an understanding, in so far as is possible, of social processes.

In relation to the second question, I suspect that Professor Hammerton's assessment of the worth of sociology is in terms of the degree to which it constitutes a predictive science of society, and the degree to which it acts as an instrument of social change through its influence on policy. That sociology has not yet proved itself as such is no argument for its worthlessness.

The notion of sociology as a predictive and positive science is closely related to the conception of sociology as a "utility" subject with welfare values. Although there is room for refinement and greater rigour within the confines of this approach, sociology will never justify itself fully within them. Attempts to do so create further grounds for criticisms such as Professor Hammerton's.

The attenuation of sociology from its philosophical roots, the concern that it should be an applied and practical subject has inevitably opened it up to criticism as a subject. Unless we can get rid of this pervasive utilitarian ideology and its underlying assumptions of our power, knowledge and right to intervene in society, the real worth of sociology, which is to make people think critically about society will be lost.

I am questioning not so much Professor Hammerton's concern but the basis of it. In place of suggestions seven and eight I think the following questions might usefully be asked: Can we afford to teach people to think in this way? Why is it important to do so? How can we ensure that the effect of the transmission of sociological knowledge is to make students think rather than to reproduce or even conserve knowledge unthinkingly? Finally, should we accept unquestioningly the now established right of intellectuals to be paid to think?

Yours faithfully,
KATHRYN ROWAN,
Assistant research officer,
Sociological research unit,
Institute of Education,
London University.

Dillon's

from Mr T. S. Yang

Sir,—I read the article by Mark Jackson (*THES* July 4) "Confidence crisis rocks university bookshop" about Dillon's University Bookshop with regret. As an acquisitive librarian in one of the university colleges, there are some things I wish to point out.

First of all I do not agree with the explanation made by Mr Ken Stephenson, Dillon's new chairman, in which he said that "a major factor in the company's crisis was the large amount owed by its big customers. Among the worst offenders are the universities", but it missed one important factor, he failed to mention why? And when did it happen?

To my knowledge, university librarians have no difficulties in paying the bills as far as their budget is concerned, then how could they become the worst offenders claimed by Mr Stephenson?

Secondly, I can not agree when Mr John Shotter, Dillon's managing director, says that "the defects of university accounting procedures in London and elsewhere do create long delays, or lead to loss of revenue".

My objection to his comment on the university accounting is based on the fact that most universities have transferred their accounts to computers, for instance London had centralized the accounts of all colleges and schools to the university computor since August 1973, after which no complaint has been heard of any drastic delay on payment of invoices.

Furthermore the University Grants Committee also informed the accountants of all universities to alert any delay of payment and asked them to ensure that the payment practice is in accordance with the best standards within the limits of normal commercial prudence.

Finally, I wish to express that no university librarian would want to cease business relations with Dillon's but nothing can be more frustrating when one has to spend a whole morning on the telephone checking a wrong order and to repeat the same query to five or six people than to find out that they were all the wrong people one has been dealing with, and having to go back to deal with the first person again. Would you blame the librarian if he stops dealing with Dillon's?

Yours faithfully,
T. S. YANG,
Acquisitions librarian,
Queen Elizabeth College,
University of London.

Sixth forms

from Mr Bruce Choppin and others

Sir,—Mr David Terry (*THES*, June 11) says he knows of no evidence concerning the size of sixth forms and the number of subjects they can offer. Some of our own as yet unpublished findings may be relevant in this context.

In our national sample of institutions providing 16 plus education we have found positive correlations between size of sixth form and number of A levels offered. In the case of comprehensive and grammar sixth forms the value obtained was 0.59, which suggests an at least modest tendency for smaller sixth forms to offer fewer subjects.

On average the grammar and comprehensive schools contained 128 students and offered 18 A levels, while sixth form colleges contained on average 419 students and offered 26 A levels. The further education and tertiary colleges contained on average 237 full-time A level students and offered 23 A levels.

No sixth form or tertiary college offered less than 20 subjects, but 23 per cent of the further education colleges and 63 per cent of the schools offered less than this number.

We would interpret this evidence as failing to support some of Mr Terry's arguments.

Yours sincerely,
BRUCE CHOPPIN,
DENIS VINCENT,
JUDY DEAN,
Alternatives to the Traditional Sixth Form Project,
National Foundation for Educational Research,
Slough, Berks.



Confused thinking in the training of photographers.

Picture by Guy Rycart

Photography Jobs

from Professor Margaret Harker

Sir,—The article "Photography students 'almost unemployable'" (*THES*, July 11) suggests a considerable degree of confused thinking about education and training in photography and career opportunities.

The following statement is indicative: "It had been found that graduates of the course (reference to the Institute of Incorporated Photographers Professional Qualifying Examination—from which exemption is granted to a number of recognized colleges offering degree or diploma courses in photography) were too well educated and often lacked the appropriate skills to move happily into vacancies in photographers' studios".

Can anyone be too well educated?

The reference to lack of "appropriate skills" gives a clue to the misunderstanding which still exists between the terms "education" and "training". A student who is undergoing a course in higher education, whatever the subject, is developing powers of analysis, synthesis and his critical faculties. If he is studying photography he is also developing abilities to visualise and construct images through the medium of photography. He should also acquire certain basic technical skills, but he will not have the time to perfect repetitive practical skills at present in current use.

The question must be asked: unemployable for what? If employers are seeking darkroom assistants or skilled printers then they should be concerned with people who have been appropriately trained, not graduates.

Most degree and diploma courses in photography include the study of associated subjects in the curriculum, so that graduates will not be limited to the practice of photography or film production as a career. Study of other forms of media and communication theory and practice are frequently associated. There are close associations between design practice and photography, as indicated in Gordon McLeish's letter (*THES*, July 18).

Students need not despair, the prospect for graduates of well balanced degree and diploma courses in photography is not as bleak as some people seem to think.

MARGARET HARKER,
Dean of the School of Communication,
The Polytechnic of Central London.

Admissions

from Elizabeth Lyddite

Sir,—With reference to the article "Costly advertising campaigns fail to attract students" (*THES*, July 4), your readers may be interested in the results of the routine analysis of sources of information used by students admitted to the Cambridgeshire College of Arts and Technology. The following figures relate to degree students admitted in October 1974.

Out of a total of 208 admissions, 72 students obtained their information about the college from advertisements or purchased entries in directories. Copies of the degree and advanced courses prospectus are sent to all secondary schools in the United Kingdom, and to all major offices of the careers service; 91 students quoted college literature or teachers or careers officers as their source of information.

The remaining students heard about the college from friends (20), through the CNAA compendium (20), or from a magazine article (14). One student applied after meeting a member of staff at a local careers conference.

(The total number of sources quoted is 218, whilst only 208 students were admitted—the discrepancy is caused by more than one source being quoted in some cases.)

At the beginning of the autumn term we shall be preparing similar figures on the 1975 intake, and should be very interested to hear how the experience of other colleges compares with our own.

Yours faithfully,
ELIZABETH LYDIATE,
Public relations officer,
Cambridgeshire College of Art and Technology.

Vice-Chancellor's 'green paper' on the future of postgraduate education

'Places for all qualified students should be the aim'

RESEARCH

The heart of the matter is the universities' responsibility for the maintenance and development of science and learning. At times of rapid social and technological change, like the present, the need for new knowledge, and for the reassessment and reinterpretation of existing knowledge, is greater and not less than in more stable periods.

This is not a mere rhetorical generalization, but a matter of practical observation. It is clear that failure to do the necessary research in new fields of social or scientific concern may have disastrous consequences.

Of course, it is not often argued that research in universities should be discontinued altogether. What is suggested is that at a time of financial difficulty there should be some transfer of resources from research to teaching. If the number of students on undergraduate and taught postgraduate courses increased without a proportionate increase in staff numbers either the quality of the teaching would suffer, or the time available for research would be reduced. Economies of scale and improvements in the techniques of teaching could provide only limited compensation for what would be lost. In some universities a tendency of this kind is already discernible.

If, for some reason, the postgraduate work, particularly the postgraduate research, were suddenly cut back, the resources liberated would in most cases not be those needed to provide more undergraduate places. The only result would be a significant waste of the total potential of the department.

The present "dual" system by which research is financed in part from the block grant from the UGC, which is expected to provide the background facilities of a "well-found" department, supplemented by grants from the research councils and contracts from industry, has worked well and economically. We think that any alternative system would be likely to be less efficient. To make these points is not, of course, to suggest that no change in the present pattern is possible.

We have received suggestions that some PhD candidates of insufficient ability are being accepted, and perhaps in some cases are receiving the degree. We think this may sometimes happen because their inadequacy is not recognized in time. If a student has worked conscientiously for three years, to brand him as a failure seems harsh. Accordingly, we think that universities should consider the introduction of a more formal and rigorous assessment of progress, say, at the end of the first year of a PhD course.

In addition, it has been represented to us that while we have an elaborate system of classification of first degrees, which undoubtedly provides an incentive for many able students, we have no such system for higher degrees. We think that universities might consider whether it would be desirable, for example, to give a public mark of distinction to PhD candidates whose work has led to an outstanding contribution to knowledge and exhibits exceptional originality and perception.

The size of the student research awards provided by the research councils is normally related directly to that provided for undergraduates. It takes account of the fact that research students commonly have to be at work in their laboratories and libraries, or in the field for a much larger proportion of the year than the 30 weeks or so for which an undergraduate is required to be in residence. But it takes little or no account of the fact that research students are, on the whole, better qualified, more experienced and more capable than the average undergraduate.

In recent years this method of calculation has been particularly disadvantageous to the postgraduates. To an increasing extent, now more or less openly recognized when the size of their grants is under discussion, undergraduates have supplemented their grants by paid work in the vacations, or if employment cannot be found, from supplementary benefits.

These arguments apply mainly to the areas of research covered by the research councils —science, technology, medicine, and the social sciences. The sums of money involved in the support of research in arts and the humanities are very much smaller, but we do not, for that reason or any other, regard it as any less essential. We think that the present system by which studentships in the arts are not allocated to departments but are awarded in a national competition organized by the DES and SED has worked well, and except in one particular, we would not wish to change it.

It seems to us that the financing of research in law, a subject of increasing importance in the universities and one in which in a changing society much research is needed, should perhaps become part of the responsibilities of the Social Science Research Council, or alternatively should have a separate organization of its own.

It is clear that in some important respects research in the humanities is seriously handicapped. We have received from a number of quarters suggestions, which we think would be widely supported, for the foundation of

Recommendations

1. A further "transfer of resources" from research to teaching would be damaging to both and should be resisted.
2. The suitability of all PhD students should be independently assessed at the end of the first year of study.
3. Universities should consider the award of a mark of distinction for outstanding PhD theses.
4. Student research awards should be increased in value relative to undergraduate grants.
5. The present arrangements for supporting research in arts through the Departments of Education and the British Academy should continue, but consideration should be given to a different arrangement for research students in law.
6. The existing proportion of intending teachers qualified in university departments of education should be retained, and the universities should provide more part-time and full-time higher degree courses for teachers, and stimulate more research in education.
7. The practice of requiring parental contributions in the grants of students undertaking postgraduate training as teachers should be discontinued.
8. The need for a substantially increased number of places for graduate students of social work should be taken into account in plans for the next quinquennium.
9. The significance and value of masters' degrees are not yet well enough understood by employers and by the general public. Consideration should be given to measures designed to rectify this situation.
10. Information about the amount and nature of self-financed "post-experience" work undertaken by all universities should be collected, and the question of whether a central index of courses is desirable should be considered.
11. An increase in the number of students reading for higher degrees by part-time study is to be expected. The needs of part-time postgraduate students, and the national provision for them, should be discussed with other bodies providing for part-time students.
12. The universities should continue to provide for a substantial proportion of postgraduate students from overseas. There should be a standard fee for overseas students which would be larger than the home student fees, but not so large that postgraduate study in this country would be more expensive than in Europe and America.
13. Postgraduate students from under-developed countries should continue to be assisted by scholarships or bursaries, which should be open to those not sponsored by their home governments as well as to those who are. Expenditure of this kind should be seen as part of our programme of aid to these countries.
14. The universities' consideration of postgraduate education in the future should be based on the general principle that students who are qualified, suitable and keen to proceed beyond the first degree level should be enabled to do so.

required would not be of the same order as those needed in the other fields. But at a time of great financial difficulty most of us feel that the alternative course of continuing to assist research through the British Academy is to be preferred.

The number of research students in arts and the humanities is comparatively small; in 1973-74 those working for higher degrees totalled 3,777. Most of these students are probably aiming at an academic career in a university or in other educational or cultural institutions. A smaller number may have in mind the Civil Service, or perhaps other administrative work. Looked at from the long-term point of view, the balance between supply and demand is reasonably well maintained.

It is sometimes asserted that, because in most cases it results in no immediate economic return, public support for scholarship in the humanities should not be provided even on the modest scale that it now is. Such a view seems to us totally philistine.

The present output of PhDs (about 5,000 annually, of whom about a quarter are overseas students) is what would be required on the following assumptions: the total system of higher education, and the number of PhDs recruited to staff it, will continue to increase at a rate of 3.5 per cent per annum (this is approximately the average rate for the past 50 years); in science and technology, and in some other fields such as economics, PhDs recruited for research and development posts in industry, commerce and government will about equal in number to those recruited to higher education; about one fifth of PhD graduates will be people who do not wish to make their careers in academic life or in research, but will seek employment in other capacities in industry and commerce, or perhaps in other sectors of education or the public service.

A vigorous programme of research in education is equally important.

PROFESSIONAL QUALIFYING COURSES

Similar considerations apply to professional qualifying courses which the universities provide. The largest single group, after the teachers, are the social workers, for whom in 1973-74 there were 1,648 places in one and two-year postgraduate courses, together with another 586 places in diploma courses admitting non-graduates.

Professional courses of this kind have not existed on anything like the required scale until quite recently, and a high proportion of the social workers now employed in the Local Authority Social Services and elsewhere lack any formal professional training. The importance of the role of the social worker in society and the responsibilities that they are expected to carry is becoming better known to the public, and the need for them to have adequate training is at present attracting much attention.

The Central Council for Education and Training in Social Work estimates that an increase of at least 50 per cent in the number of places available for this purpose would be necessary to meet the recognized need in the next quinquennium.

There are clear indications that in the near future similar postgraduate professional courses in other areas will be required. One such area is that of social policy and public administration, which now forms an important element in a number of undergraduate

TAUGHT COURSES

Taught courses have been in recent years an increasingly important element in postgraduate work. The number of students in such courses registered for higher degrees was listed for the first time in 1970, when there were 8,528 of them. In 1973 the last year for which statistics are available, the number had grown to 10,824.

Postgraduate taught courses in the United Kingdom universities are clearly highly esteemed. They attract students from all over the world, including many from countries whose industrial and educational systems are as developed as our own. And the degrees which are conferred on students successfully completing them, usually MA or MSc, are recognized throughout the world as marks of high attainment, comparable with those conferred in other countries.

British employers on the whole recognize them as useful, but, except in a few fields such as management, do not do much to encourage students to take them.

In part, no doubt, the universities are themselves to blame. They are not accustomed to advertising their products, and have not done much to persuade employers or the public at large of the value of postgraduate qualifications. The significance of a first degree is very widely recognized. Indeed, there are frequent instances in which professional bodies which have traditionally been accustomed to recruit non-graduates have found that if they are to maintain the quality of their recruits they must seek them in the universities and require a degree.

At the PhD level also it is not necessary to publicize the value of the degree to that limited public—in the main institutions of higher education and of research and development—for which PhDs are primarily intended. The meaning of a master's degree, however, is not widely understood because of the newness of taught courses for these degrees. The universities should consider in consultation with industry and the other important employers of graduates what can be done to make the meaning of a master's degree as well and widely appreciated as it has become in the United States and Canada.

POST-EXPERIENCE COURSES

At present it appears that few people have any real idea how much work of this kind the universities do, or how much effort they put into it. Such courses constitute one among a number of services which the universities perform for the public. They provide one of the important areas of contact between the university and the local community; it attracts the interest of a large number of people with whom otherwise we should have no contact.

However, the universities are often accused of being remote and isolated from the society outside their walls, and this criticism, if it were true, would be damaging. It would be worth while to put more effort into publicizing what we do, and as a first step it would be no bad thing if we were ourselves better informed on the subject. We recommend that universities should get together a reasonably complete index of the post-experience courses available in a sample year and that, if this can be done, the Vice-Chancellors' Committee should consider whether some form of regular publication is desirable.

There can be little doubt that part-time students represent from this point of view a few exceptions they support themselves, and if they make a good deal of use of university buildings and other facilities, for the most part they do so in the evenings, at weekends, and at other times when there is spare capacity.

In 1973-74 about 30 per cent of postgraduate students in United Kingdom universities came from overseas. The universities are unanimous in welcoming them and regard their presence as beneficial. Among the principal arguments advanced in favour of the acceptance of a substantial proportion of students from abroad are the following:

They contribute a significant broadening element to the experience of home students. Universities are interested in all the diverse societies and cultures of the world. To have representatives of all these societies and cultures among us is a significant contribution towards understanding them.

It is important that there should be opportunities for British students, and also senior people, to study in universities in as many countries as possible. They are now likely to be welcome unless scholars of all nationalities are accepted in the United Kingdom.

The provision of postgraduate education for students from countries which have not yet made adequate provision of their own at this level is one of the most effective (and relatively inexpensive) forms of overseas aid.

We suggest that a system based on the following principles should be devised:

As at present, there should be a uniform fee, different from that paid by United Kingdom students, for all overseas students. The size of the fee must in reality be, in part at least, a matter of political decision, but it should not be so large as to make the total cost to foreign students of postgraduate education in this country out of proportion with that obtaining elsewhere, for example, in Western Europe or in the United States. (In the latter case, the fact that there are often better opportunities for earning money by part-time work during courses must be taken into account.) The experience of 1966 shows that the number of postgraduate students seeking admission to the United Kingdom universities can be sharply diminished at least temporarily by an increase in the fee.

It is highly desirable that the Government should continue to provide help in the form of postgraduate scholarships, or in some other ways to students from countries who would not otherwise be able to afford to come, but money provided in this way should be seen as part of our programme of overseas aid and not as part of the general cost of university education in the United Kingdom. Many such students come as a result of sponsorship by governments, but there should always be some provision for those who come on their own initiative.

It must be recognized that any substantial increase in fees will be accompanied by a fall in the number of students coming to this country. The immediate financial consequence to universities of any increase of fees should be calculated taking this factor into account.

FUTURE POLICY

It is accepted that anyone offered a place for a degree course will not be prevented by lack of money from taking it up. To give this policy meaning there has to be a definition of what "qualified for entry" means. This is specified in the "minimum entrance requirement" to degree courses, generally including two A-level passes, but with limited concessions for "mature students" and people with qualifications of other kinds.

The ground on which the universities take their stand must be that the principle applies as much at the postgraduate level as at any other. Those who think, or appear to think, that it ceases to apply at the first degree level must be pressed to provide reasonable grounds for their belief.

The universities must continue to assert that this policy, of enabling everyone to go as far as he can, is the right policy. In all probability the complexity and sophistication of the tasks that have to be undertaken will continue to increase and the need for as many people as possible to be qualified above the level of a first degree will increase in proportion.

To suggest any extension of educational opportunity at present, however, may seem to be very untimely. We recognize that financial considerations may limit very severely what can be done in the next few years. Nevertheless the universities should have in mind the objective to which they hope to move as soon as they can.

In these paragraphs we can do no more than sketch the outline of a possible policy for the future. We include them in our report in order to explore the extent to which such a policy would receive general support from the universities. Whether or not our suggestions are on the right lines, however, unless some general policy and direction can be formulated and agreed, there is in our opinion a grave danger that in years to come postgraduate education in the universities will be starved of the resources which it must have if the universities themselves, or any of their activities, are to flourish.

Edited text of the report. Study Group on

Alfred Morris suggests new ways of allocating university finance

'UGC should stop paying research overheads'

The nature of universities is such that they are not good at discrimination in the internal distribution of resources. The University Grants Committee calculates quinquennially the needs of individual universities primarily by reference to the level of their existing commitments and to the proposed pattern and rate of increase in their student populations. Block grants received from the UGC are subdivided by universities on a similar basis.

The tendency is to fall back upon notionally equitable formulae for the subdivision of the block grant which the UGC intends to provide for teaching and research. The UGC-financed research capacity of an academic department is arbitrarily determined and the pattern of its application depends largely upon department politics as conditioned by the notion that equity demands that all academics be given similar opportunities for research.

Under present arrangements the UGC-financed research capacity of a university department increases in close, if not strict, proportion to its student population. What is more, "academic tenure" so limits the scope for redeploying university resources to match changing "student preference" and "manpower demand" that, at least in the short term, the time available to academics for research expands in direct proportion to any decline in applicant interest in a particular subject.

The present system locates discretionary decisions on UGC-financed research where it is most difficult to exercise it on a discriminatory basis—at university level, for disposition between departments, and at departmental level for disposition between projects.

If the national interest and considerations of timeliness and promise are to hold much sway in adjudicating research proposals then discretionary decision-making capacity, while it must stay in academic hands, needs to be relocated at national level. Its exercise, on a more conscious basis needs to be informed by a sound quantitative perspective which demands the introduction of activity-accounting formats illustrating the pattern of resource allocation between the prime tasks (teaching, research and public service) in individual academic subjects at each university.

Extension of the activities of UGC sub-committees to include distribution of annual incremental grants and control over the creation or redistribution of academic posts, would automatically relocate decisions on UGC-financed research at national level and in the hands of academics. More thoughtful consideration suggests a transfer of responsibilities and monies from the UGC to the research councils so that the former be responsible in future for funding only teaching effort and the research and innovatory experiment concerned with the teaching and learning process.

Such a transfer would similarly relocate at national level, and in predominantly academic hands, decisions on the funding of university-based research. It would strengthen the role of the research councils by increasing their budgets and widening their scope and by limiting the responsibilities of the UGC it would make more manageable the increased work load which would be imposed upon it by implementation of proposals for annual incremental grants and for control over the creation and re-distribution of academic posts.

The tenured academic, presently paid from UGC funds, is the lynchpin of both undergraduate and post-graduate teaching and the research in the universities. There are some academics whose time is almost wholly devoted to research to the exclusion of teaching and in respect of whom it is possible to transfer corresponding responsibility and funds from the UGC to the research councils. It is also practical to propose that in future the creation and funding of permanent research posts, including permanent or fixed-term translation of an existing tenured academic post to exclusively research purposes, be a research council responsibility.

Similar arrangements could be made regarding those academics whose time is almost wholly devoted to teaching postgraduates or undergraduates on courses for which research councils assume responsibility. However, the majority of tenured academics are paid from UGC funds and engage mainly in undergraduate teaching whilst also undertaking individually or with others one or more of the several different activities, usually described, albeit carelessly, as research.

For most academics it is possible to ascertain the distribution of their time between categories of activity as was done in the Committee of Vice-Chancellors and Principals' inquiry into the use of academic staff time. It is then possible to apportion expenditures between activities according to agreed conventions; the proposals earlier made for introduction of activity-accounting would require just such appointments.

Unfortunately whatever the merits of activity accounting it is an impracticable basis upon which to transfer funds from the UGC to the research councils in recognition of their redefined responsibilities. The typical academic engages in teaching and research in proportions reflecting current norms of expectation which are only marginally negotiable and though employed by the university, a legally autonomous body, he enjoys a security of tenure which is effectively financially underwritten by the Government.

It would be an administrative nonsence to divide between several government agencies responsibility for footing an academic salary bill which no one of them can avoid.

It is possible and desirable to spotlight the attributable cost of research. Doing so will improve the quantitative perspective and will affect the decisions at the margin which do in the long term reshape the whole. However, the only monies which it is worth transferring from the UGC to research councils are those which are both attributable to and, in the short to medium term, avoidable as regards research, post-graduate training and such other activities for which the research councils are to assume total responsibility.

Since the research councils already meet the direct avoidable costs of such projects as they sponsor, the transfer to their budget from that of the UGC in respect of those projects should be limited to an estimate of the attributable and avoidable overhead costs to which they do not at present contribute.

The UGC once estimated that externally financed research generates an unrecouped overhead burden amounting to approximately 40 per cent of the direct costs funded.

The transfer would be a significant figure in proportion to research councils' present aggregate expenditure on university-based research.

Research councils could announce that they would in future meet the estimated indirect and avoidable overhead burden as well as the direct avoidable cost of any research proposal accepted. In respect of current research grants they would indicate that no change was to be made in the basis of funding but that on termination of all such grants the recurrent grant income of the university concerned would be reduced by the UGC to the extent of the estimated indirect and avoidable overhead burden.



Mr Alfred Morris

To the extent to which the recurrent grants for subsequent years were reduced a transfer would be made from the UGC's budget to that of the appropriate research council.

What has been proposed sounds complicated and demanding but is not in fact far removed from present intentions. For example, universities are already supposed to calculate the full economic costs of research proposals. All that is new is the suggestion that the costing basis be defined and that the information when produced should flow to the relocated point of decision.

The UGC would now be a body primarily concerned with funding the baseline of universities' existing commitments and then concentrating upon allocating additional monies for teaching (possibly of undergraduates, or even of undergraduates on non-vocational courses, only) and for research into the teaching and learning process.

Such a UGC would have an interest in encouraging high estimates of research overheads in order to reduce its financial inputs per student which would now be regarded, reasonably as regards quinquennial increments, as the necessary costs (given university teachers' current norms of expectation regarding the "mix" of their activities), of using universities rather than, say, polytechnics as the vehicle for progress towards mass higher education. The norms of expectation would come increasingly under resistable but healthy pressure from a body primarily concerned with education and now controlling the creation and re-allocation of tenured academic posts.

What is true of the joint operating costs "academic salaries" is also true of joint capital costs such as buildings and equipment. To the extent that certain equipment is near exclusively required for research purposes rather than for teaching, and similarly regarding certain buildings, the funds should be allocated by the research councils and if necessary a corresponding transfer made from the present budget of the UGC.

However, the problem of jointness arises in respect of most equipment and buildings and the sensible arrangement must be for the UGC to remain the funding agency for such capital expenditure but informed in its decision-making by activity-accounting information showing the extent to which present capital assets are devoted to specified uses other than undergraduate teaching. It is important that buildings and equipment grant sub-committees of the research councils and of the UGC have joint members and co-ordinated information flows.

The proposals for funding research projects on a full cost basis involve a considerable reduction in the extent of the resources over which universities budgetary autonomy extends — and smaller cakes may encourage more thoughtful portioning. The proposals for annual incremental grants by the UGC, often on an earmarked and limited time basis, and more so the proposal that the UGC in future should concern itself with providing additional monies for teaching purposes only, would curtail future growth in the aggregate resources over which universities enjoy budgetary autonomy.

What is more it would be a mistake to underestimate the extent to which changes in accounting formats could affect decisions and behaviour. If the UGC and research councils require information presented in activity-accounting format then the delineation of the extent to which resources are disposed between teaching and research is likely to spark new debate, beg questions, and produce different decisions within the universities as well as at national level.

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This article is based on a longer paper in the spring 1975 issue of Higher Education Review.

When should career guidance begin?

Career guidance should be a long-term programme which takes into account the developing nature of individuals beginning in the primary school and continuing through higher education and into work, Professor Donald E. Super, of the National Institute for Careers Education and Counselling, advocated last week.

He was speaking at a Cambridge seminar on the future strategy of career guidance organised by NICEC, an institute set up by the Careers Research and Advisory Centre and the Hatfield Polytechnic earlier this year to develop guidance services in Britain.

Professor Super, currently professor of psychology and education at Columbia University, New York, said the developmental approach to careers guidance had not appealed to careers counsellors because, the logic of the idea had not been bolstered by methods and materials. But it was the purpose of NICEC to translate the approach into practice.

In the United States it was only since 1971 that schools had begun to treat careers guidance as a long-term programme allowing for the developing nature of aptitudes, interests, personality and aspirations through education into work.

The developmental approach had been distorted by expecting occupational exploration to be completed by 16, at which time choices had to be made, Professor Super said.

Careers education had been left to classroom teachers who did not understand careers. It was to be hoped that as the United Kingdom developed their own experience of career education they would not make the same mistakes.

This developmental approach to careers education was supported by Dr Peter P. Dawn, senior lecturer in education at the University of Keele's Institute of Education. He said that if careers programmes were set up on a long-term basis they had to be anchored to the reality of development.

Counselling had alerted careers specialists to certain job aspects ignored in the past. When young people started to think of the range of opportunities available to them, they should try to find a job to fit in with their emerging life pattern. Their friendships, family, education and all areas of social opportunity played a part in work choice, Dr Daws said.

He added that careers education should not stop after formal education. The early stages of work should be monitored and counselling should cover adjustment problems. This area had often been ignored in the past.

But the developmental theories were questioned at the seminar by Mr Kenneth Roberts, of the department of sociology at Liverpool University. He maintained that elements of choice and decision-making should be forgotten when examining how young people entered employment.

"It is misleading to make the concept of occupational choice central. I don't believe most individuals make any career choice," he said. Opportunity structures were the key concept required to understand the British school leavers' transition from school to work.



Is it too late by the time they reach secondary school?

"My evidence is that the developmental theories bear a closer resemblance to reality in America, where they originated, than in Britain."

Mr Roberts claimed that most people took whatever job was available to them and when it came to choice and decision-making, were very adaptable. A variety of occupations could be tolerable.

In Britain, despite the reorganization of secondary schools along comprehensive lines, formal selection remained built into all but primary levels of the educational system and interlocked with occupational recruitment processes. Individuals' preferences were simply unable to play a sufficiently dynamic role to justify being treated as the key variables in employment entry theories. Many key vocational decisions were taken not by the individual but by procedures institutionalized in industry and education.

Mr Roberts maintained that at the careers guidance came to a stop. The Youth Employment Service showed little interest in maintaining contact with clients in their working lives.

He argued that studies in Britain showed the majority of school leavers failed to enter jobs reflecting their stated aspirations. The most relevant information regarding job preferences was not obtained by finding out what an individual would like to do but in discovering his educational qualifications.

Young people were not equipped with perfect job knowledge even after careers courses and as the time to leave school approached, perhaps with a few unsuccessful applications, the pressures to take any type of job became dominant.

Careers guidance impact was marginal, Mr Roberts said. For people leaving school at 16 it was only of limited help because the opportunities were so restricted. There should be a concentration on opportunity structures in the future.

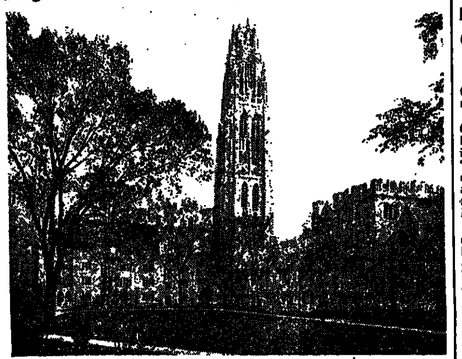
executive head of NICEC, suggested that careers education ought to begin to attach equal rather than subsidiary importance to family, community, leisure and other non-occupational roles.

He criticized the amount of careers material available, much of which was badly devised. The economic crisis could well force more selection about careers materials and their effectiveness.

Speaking on aspects of career training, Mr Bill Law, senior fellow of NICEC, said careers guidance called for considerable judgments and training should prepare counsellors for the stress of the job.

Mr Law said that not enough time had been spent experimenting with two-year sandwich courses leading to a diploma. Training should be theoretical and practical, linked on a week-to-week basis to operational situation in which trainees would eventually spend their employment roles.

Fragments of a life in academe: 6—YALE



Harkness Tower at Yale University.

Bizarre philosophy and the pleasures of cricket

I was offered a more permanent job in Yale, where I was from 1955-56, but returned reluctantly to Britain. America opened up my eyes to a new intellectual world.

In those immediate post-McCarthy days visas could be a problem. The preceding summer was dragging on, and the American Embassy was difficult, for no particular reason. I transferred my application to the consulate in Glasgow.

It was a lovely summer; six weeks without rain in the West of Scotland, and me reading Heidegger for kicks and to suit myself to the expansive philosophical scene in the United States, where Oxford philosophers were, more than anything, specimens of a peripheral movement at that time.

Or so it seemed at Yale, where I was specifically imported as an Australian animal in the metaphysical menagerie. Arthur Pap was there, too, that year, a delightful and distinguished analytic philosopher of the American style. We used to wonder to one another whether being converted on a philosophical point might not endanger one's job.

Anyway I lay on the grass that preceding summer, on the slopes in front of Glasgow University's Gothic glory, reading Heidegger and waiting for a visa. Still no visa; I had to act, and demanded to see the vice-consul. He was a Yale man, and the application took no time at all.

"I can see by looking at you", he courteously said, "that you were never a member of a Communist Party or any affiliated organization, not to mention Fascist organizations; and it is obvious that you do not have venereal disease." I had avoided the spiritual and physical plagues.

I worked in the philosophy department, and also did graduate work in Pali and Sanskrit. The best thing about Yale philosophy was the younger instructors and research students, many of whom have made a name for themselves, and they were most friendly and hospitable.

While at Yale we stayed in the house of the widow of Ralph Linton, one-time dean of American anthropology. You would tap your pipe meditatively on a bowl, forgetting it was Inca.

I bought his old typewriter, and several of my books have been bashed out on it. I felt it was animated by the spirit of Linton's multidisciplinary breadth of interest, and so tried, if feebly, to keep up with my typewriter.

I found some of the philosophy a bit bizarre, for instance the work of the brilliant, ebullient and obfuscatory Paul Weiss, whose aggressive Brooklyn accent masked a desire to be Renaissance man. Also that of Filmer S. C. Northrop, given to wide-ranging connexions, both social and mental, and who advised my friend Bryan Magee (than a visiting fellow) to relate modern logic to the foreign policy of the British Labour Party. (Popper in combat with Shelepin, no doubt). But although sometimes bizarre, it was generous in a way Oxford Philosophy often was not.

One evening when I was walking home a young philosopher stopped to give me a ride (walking seeming to him a somewhat bizarre act) and remarked: "You know, you seem a pretty nice guy." I blushed: to what did I owe this compliment? "You see, I didn't know that an Oxford philosopher could be like that", he went on.

True, many had acted in an arrogant and farouche manner on the American circuit, then beginning to open up. So there was something to be said for the menagerie theory, though it could encourage unnecessary eccentricity.

While at Yale I went to the American Philosophical Association convention, then in Boston. Since we were staying with the philosopher Quine, who did not suffer philosophical fools gladly, I did not get to too many of the sessions, for he thought most of the papers would be useless.

Instead, we were taken off to one or two amazing anthropological films he wanted to see (for the anthropologists were meeting there too), to one or two night spots where good jazz was to be heard, and so forth.

And of course it was well known that the main function of the convention was the slave market. There I was innocently walking along a corridor in the convention building and a fellow nipped out from a side room and said: "Your name Smart?"

I agreed it was. He took me by the arm and escorted me into the room, conspiratorially; and offered me a job at a good girls' college on the East coast.

The other side to my life in Yale was Indian studies. At my preceding university, in Aberystwyth, the National Library of Wales had a certain amount of oriental material; the Yale library was a marvel, and I was also fortunate in having as a guru Paul Tedesco, who taught Pali and Old Church Slavonic (I fear I did not share his interest in the latter).

Only two of us were working in Pali. He was very rarely given to discussing ideas, but on the language we had a truly profound knowledge.

In a way he was fortunate, for he had been in a concentration camp at the end of the war and, as a Jew, destined doubtless for liquidation. But the famous Franklin Edgerton, the Sanskritist, brought him over to Yale and he was nursed back to health and intellectual productivity.

Edgerton's successor, incidentally, was a German—a fact that Tedesco found emotionally hard to accept.

So Yale was intellectually very fruitful for me. It gave me experience which was useful to my forthcoming post in the history and philosophy of religion in London.

Had I stayed I would have regretted the comparative absence of cricket — though even there Yale could provide something. I played cricket for Yale. We lost to Harvard and the United Nations, had mixed fortunes against a British Commonwealth XI in Washington, but beat Harvard with aplomb. *Eheu fugaces!*

Ninian Smart

Correction

The author of "From project evaluation to public judgment" (*THES*, July 18), was Barry Macdonald, director of the Understanding Computer Assisted Learning (UNCAL) project at the University of East Anglia.

James Eggleston and Mick Youngman discuss the results of a survey of the performance of BEd students

'High failure rates will persist until selection procedures are improved'

Colleges of education in the Nottingham Area Training Organization are in a process of transition from an "old-style" Bachelor of Education degree to new degrees, designed in accordance with the prescription of the White Paper *Education, A Framework for Expansion*.

In order to realize the aspiration of an all-graduate teaching profession possessing degrees which enjoy the same status as other bachelor degrees, the recommended changes included the imposition of normal matriculation requirements. Thus parity between degrees in education and degrees in other disciplines should be established inter alia by candidates who on entry to college possess less than two A levels.

Percentage achieving given degree class of candidates similarly qualified at entry

Degree class	Less than two A levels	Two A levels or more
I	1	3
II¹	14	9
II²	23	25
III	19	31
P	42	30
F	1	0
	Total 80	Total 231

The percentages are rounded off to the nearest whole number

Table II compares the degree performance of candidates with two A levels and those with less than two A levels, and with no other qualification which might be deemed to be equivalent to two A level passes.

From Table II it is clear that the 80 candidates without two A levels selected on the basis of their Certificate performance have achieved BEd degree classes comparable to those of students who have both matriculation qualifications on entry to college and reinforced their claim at the third-year stage. (There is no significant difference on a chi-square test.)

In fact 38 per cent of each group obtained a lower second-class honours degree or better.

Our survey has shown that of the 1,955 students who entered colleges in the Nottingham ATO in 1969, 643 possessed qualifications that included 2 A-level passes or better. Three years later, 231 of these students (i.e 36 per cent), were qualified by attainment in the certificate course, and wished to continue to read for the BEd degree.

Unfortunately our data do not allow distinction to be drawn between those candidates who failed to survive due to poor academic performance and those who were not inclined to continue their studies.

Of the remaining 1,312 who did not have 2 A levels, 162 (12 per cent) went on to read for the BEd degree. The differences in BEd transfer rate (36 per cent versus 12 per cent) are marked, but even so the distributions of the degree classes among students in each of these qualifying groups were virtually indistinguishable.

The fact that as many as 64 per cent of the 2 A-level entry students, after three years on a certificate course, either failed to be selected for the degree course or decided against pursuing a degree course casts real doubt upon the adequacy of the college entrance selection procedures for subsequent application to BEd course admissions.

The predictive validity of two A levels is called into question both for this reason and because of the low correlations between A level measures and subsequent degree performance.

Such doubts are reinforced by the achievements of those without two A levels since 12 per cent of this group survived selection at the third year stage and subsequently received degrees comparable in standard to those of the whole degree intake. In the year investigated, 1973, BEd graduates totalled three-fifths with two A levels and two-fifths who would not normally have matriculated under the proposed new regulations.

These data may help to dispel the fears of those who consider that the standard of the BEd degree is necessarily at risk when candidates without two A levels are admitted. Furthermore, possible explanations for this unpredicted success are not difficult to find.

Conditions under which pupils work at school are different from those under which students study at college. Variation between schools may well mean that A level performance is subject to factors not related to a pupil's academic abilities. And many of the topics studied during training, with their strong bias towards social and psychological problems have little in common with most school subjects.

It is, therefore, perhaps not surprising that selection of BEd degree candidates after three years at college is not significantly improved (in terms of its predictive value) by knowledge of A level performance.

On the other hand the comparability of degree performance by those with and without two A levels emphasized the value of the training period as a selection process. Is the price to be paid for more accurate selection the maintenance of the safety-net certificate course?

The proposed policy for colleges of education under the new BEd regime is to reduce student intakes and to insist on two A levels as a normal matriculation requirement. Thus colleges in the Nottingham ATO will probably be reduced to an overall intake of well under 800 per year.

If this intake were to consist exclusively of candidates with two A levels and if the performance of the 1969 intake is even a crude guide, the "drop-out" plus failure rate could be substantial. Unless acceptable arrangements can be made to provide for categories of "exceptional" entrants, then potential BEd graduates will be lost to the profession.

Admittedly, an estimate of just over one in 10 of the students admitted without two A levels who are able successfully to complete a degree course will mean that as the proportion of such students falls, so the number of graduates in this category will diminish.

It is possible that under the stimulus of reduced target-intake numbers, colleges will apply more rigorous selection procedures and increase this one in ten ratio.

Possibly the most prudent course of action for the DES to take is to maintain the Certificate in Education, allowing colleges to select their intakes according to criteria which they consider appropriate, including two A levels or better.

As the population of suitably qualified entrants grows the need for the Certificate course will diminish. In the meantime exceptional matriculation based on performance in college would do much to ameliorate the defects of relying on A levels as a limiting selection mechanism.

Such a system would allow the greater flexibility required to deal with those subjects in which there is a shortage of candidates with A level qualifications.

A potential danger of the policy of normal university matriculation requirements is that the relatively low failure rates of university departments may come to be accepted as normal for the BEd degree.

A BEd degree carrying with it qualified teacher status requires a broader spectrum of attainment than "academic". It follows that relatively high failure rates (or drop-out rates) can and must be expected until selection procedures operate much more effectively than at present.

James Eggleston is professor of education and Mick Youngman is a lecturer in the school of education at Nottingham University.

TABLE I

This table shows the performance of the 1969 intake in terms of degree qualifications and facilitates a comparison between those candidates with two A levels or more and those candidates with qualifications other than two A Levels.

Degree Class	Two A Levels or more								Less than two A Levels							
	C₁	C₂	C₃	C₄	C₅	C₆	Total	C₇	C₁	C₂	C₃	C₄	C₅	C₆	Total	Total
I	0	1	0	0	0	0	1	6	0	0	0	0	1	1	1	11
II	0	1	2	0	0	4	13	2	21	1	2	3	1	1	31	42
IIx	1	11	4	2	0	6	35	1	60	3	7	6	2	4	83	93
III	2	21	8	7	2	4	28	1	71	1	11	7	5	6	43	114
P	7	13	18	0	0	11	70	4	18	4	2	1	0	0	58	128
F	0	1	0	0	0	0	1	0	1	0	1	1	2	0	4	5
							231								164	395

C₁, C₂, C₃, etc, indicates the college in which the candidate was trained.

The crisis in black studies

from Angela Stent

CAMBRIDGE, Mass

Seven years ago, the assassination of the Rev Martin Luther King galvanized black students to demand that universities introduce black studies. In the general climate of campus activism, interdisciplinary black studies programmes mushroomed—but the black studies experiment has turned sour.

Today, many programmes are closing down, and black staff and students are becoming deeply divided. Black applications to colleges have begun to level off, and the controversy over Afro-American studies has become part of the more fundamental issue of the place of blacks in universities.

In the late 1960s, many college officials saw the introduction of black studies programmes as a solution to past racial wrongs, as an instrument of cultural identity for black students, and as a way to legitimize the study of the black experience in areas such as history, sociology and the arts.

By 1972, nearly half of the 2,578 colleges in the country were offering at least one black studies course, and 500 colleges had full-time black studies programmes. That number has now dwindled to 200, and registers across the country report that only 10 per cent of their students take more than two courses in the subject.

Yale history professor John Blassingame, former acting-chairman of the department of Afro-American Studies at Yale, predicts that by the late 1970s most of the black studies programmes will be gone. And a recent Berkeley report on the black studies department criticized the programme for having the reputation of "not being truly professional, or at least not academically oriented."

The history of Harvard's black studies programme is in many ways typical. In 1963, the Harvard-Radcliffe Association of African and Afro-American Students was founded, but it never received official recognition because of what was seen as its separatist membership policy.

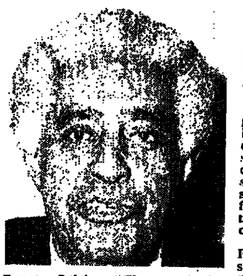
In 1969, responding to increasingly violent demands Harvard established a department of Afro-American studies and gave undergraduates full voting powers on its academic board.

However, many distinguished black scholars refused to teach in the department, and those that did teach there found that control passed to the militant undergraduates.

After a series of crises, an investigating committee recommended that



Martin Kilson—"Black studies are academically inferior".



Ewart Guinier—"The need for liberation".

undergraduates should lose their voting rights. A search for new staff was launched and curricula were altered. The most vocal critic of Black Studies at Harvard is Professor Martin Kilson the only tenured black professor in the Government Department. A member of the faculty since 1962, he teaches African politics and patterns of urban American politics. He criticises black studies because he says they are academically inferior and reinforce an unhealthy separatism.

He says that Afro-American studies are blatantly anti-intellectual and that most departments have no intellectual integrity. "The militant separatists among Negro students and faculty on white campuses have convinced themselves of the impossible—that the inferior academic standards and norms they helped to impose upon white colleges hold the key to black unity and rejuvenation. "No ethnic group in American society has ever advanced its standard of living and status without accepting achievement-orientation as a desirable life-style," he says.

Professor Kilson's main opponent at Harvard is Professor Ewart Guinier. A sociologist who came to Harvard in 1969, he is chairman of the Afro-American Studies Department and its only tenured professor.

He says: "Afro-American studies are our best—perhaps our only—academic vehicle for introducing those values with which our great leaders have been deeply concerned —the need for the liberation of African peoples throughout the world, the need to create a more humane structure of human relationships for all."

He denies that his department is academically inferior: "Our major difficulty has been that the university has not supported our department as it initially stated it would", he says.

With about 20 of its 600 black students currently majoring in black studies, Harvard is attempting to recruit staff. But because of the department's controversial reputation, this has been difficult.

Generally black studies programmes have declined in popularity because of diminishing student interest, insufficient funding, staff scepticism and increasing student preference for marketable skills. However, some academics suggest that they may have already fulfilled their function and that if they are to survive, they must change.

The evolution of the Ford Foundation's support for black studies programmes may be a pointer to their future. The foundation has changed from short-term support for different undergraduate programmes to more solid financing of development at graduate level. The new emphasis is on developing materials to be used in black studies programmes by producing highly qualified scholars.

While the debate about the value of the courses continues, colleges are finding it difficult to recruit black undergraduates. Harvard, for example, recorded a 25 per cent drop in applicants this year.

Between 1964 and 1970, the number of black students on mostly white campuses increased by 173 per cent. However, although blacks constitute 12.1 per cent of the college-age population, they still make up only about 8 per cent of the college enrolment.

There is some controversy over the causes for the fall-off in black applicants, but officials say doubts over finance are one of the main factors. There is also a feeling that the pool of "qualified" applicants is drying up.

Boost in campus holidays for the family

from Frances Hill

NEW YORK

Cornell University's "education vacation" for the whole family, offering courses for adults and a variety of learning experiences for children, is proving more popular than ever this summer, nine years since it first started. Some programmes were fully booked by April, and enrolment is up by 50 per cent.

Cornell is one of five American universities offering parents the opportunity to turn one or two weeks of their annual holiday into a short adult education course for themselves, and a summer camp for their children.

Started as a service for ex-students partly to raise extra old-boy donations—the programmes are now open to all. No educational qualifications are needed.

Courses include two cross-disciplinary sessions of a week each and a variety of workshops on topics such as horticulture and photography. There is pre-school education for children aged three to five, and programmes for children aged 5 to 6, 6 to 12, and 13 to 16.

Parents and children can meet at meal-times and in the evenings. Parents of small children get them ready for bed, but counsellors—mostly Cornell students take over bedtime tasks, such as reading stories, and act as baby-sitters.

The two courses are "Life Down Here and up There" and "Revolution, Tradition and Cultural Exchanges".

The first is run by an astronomer, a biologist, an historian and a professor of literature, and examines the development of science, the way men in different periods have viewed space, the cellular structure of living organisms, and the scientific possibility of life elsewhere in the universe.

The second is taken by an historian, a professor of literature, a psychologist and a structural engineer and studies various revolutions in literature, architecture and society. It also looks at what makes a "revolutionary personality".

Adult students, although not required to do homework during the courses, are expected to read four texts sent to them before their courses begin. There are no papers or examinations, and students do not gain credits.

Each of the inter-disciplinary courses costs $170 per student for tuition, room and board. The workshops cost $180, the courses for older children $100 and for three to five-year-olds $75.



Cornell University, the Arts Quadrangle

Mozambique

1,500 students go out into the community

from Andrew Lycett

LOURENCO MARQUES

Some 1,500 students at the University of Lourenco Marques and its associated faculties started a voluntary four week work-with-the-people programme this month.

Under a white Frelimo-appointed rector, Dr Fernando Ganhao, Lourenco Marques University has been restructuring itself for its new role in the Marxist society of newly independent Mozambique.

Dr Ganhao, who worked in the Mozambique Institute in Dar-es-Salaam, and in Warsaw, believes strongly in discussion as a method of teaching and as a prerequisite to action. Already some lectures have been stopped, and seminars introduced.

Students have been encouraged to take a lead in the decision-making They have initiated healthy and literacy campaigns in the countryside. Even history undergraduates have toured the rural areas investigating sources, looking at problems of local history, and trying to convey their interest to the people.

The current month-long campaign of working with the people is an extension of this. It is designed to allay the criticism that the university is too academic.

Recently, for example, the number of law students was double that taking agriculture and allied subjects; in fact this was accounted for by the disproportionate number of middle-aged whites working hard to obtain professional qualifications before independence. The agricultural faculty has already been moved away from the capital.

One of the main problems is to find qualified people to teach them. A large number of lecturers have left Mozambique for Portugal, not simply because of fear of independence, but also because there are three new universities in Portugal ready to be staffed. With them have gone some 800 students.

Until now it has been almost impossible for foreign academics to work in Mozambique, but Frelimo are said to be keen to introduce qualified people from abroad to help reconstruction. In education, they will be especially hampered by the shortage of books and modern materials. Syllabuses have to be rewritten. The economic theory taught in the university is now considered old-fashioned.

But it is obvious that Frelimo will not want to antagonize the students, who will be needed to restructure the country. Hence the careful treatment and the voluntary work with the people. But the guidelines are set for a basic change in educational policy, and students will now be encouraged to work for the people rather than themselves.

Peru

Pressured universities still escape reforms

from Patrick Knight

LIMA

The far-reaching programmes of educational reforms being undertaken by the left-wing nationalist government of Peru have still not been extended to the universities. General Velasco and his ministers regard them with a certain suspicion and they have been given low priority. The main need is perceived to be to produce the large numbers of middle-level technicians and skilled workers needed to establish and build up the heavy industrial base now being formed.

The universities of Peru are under pressure from several directions. The high salaries paid by the growing public administration are siphoning off many of the best staff, while student numbers continue to expand and candidates for entry rise even faster. Funds have scarcely been increased in recent years, per capita they have fallen and it has yet to be decided—part of the long-delayed University Reform Law—under which auspices the research effort will finally be considered.

The result of these forces has been that the majority of staff left in the universities are of poorer quality are those who, for ideological reasons do not wish to work for the government, or are unacceptable to it. Many are either on the far right or the far left and several universities have come to be labelled as strongholds of a particular group. Partly as a result of staff influences, also because of limited employment opportunities, students, particularly in Lima, tend to be substantially opposed to the present regime, and there have been endless strikes and disturbances in many institutions.

As well as being relatively late well paid than in the past, university staff have lost the position of prestige which they so long held in society. Ambitious young men no longer seek the cachet of a university teaching post to benefit them in their profession; a job in public administration now has much more prestige. Consequently, the number of full-time staff has gradually fallen, with the part-time staff who replace them lacking in commitment to the institution.

Teaching loads are heavy, up to 15 hours a week, with a 10-hour minimum for a lecturer, whose salary is around £150 a month, while advancement to higher posts remains very slow.

Despite growth in student numbers job opportunities in Peru have still not caught up with the supply of trained people, other than in areas of science and technology, where entrance is severely restricted because of a lack of adequately equipped laboratories and workshops. The private universities, which have mushroomed in recent years, seldom extend from the humanities and arts because of the costs of providing courses in technology, costs which the majority of students are unable to pay.

Efforts are being made within the Higher Education Council, the universities coordinating body, to provide manpower demand projections in consultation with the Planning Institute and the various ministries, something which has not previously existed. The council is also currently processing data collected about graduates, their employment and how they are using their degrees.

Certain ministries and public bodies now choose their candidates almost exclusively from particular universities. Others, such as the Federico Villarreal University, a centre of the APRA party, in opposition to the Government, is painted as a centre of anti-government subversion, and graduates from there are having increasing difficulty in getting jobs. Graduates of other state universities whose courses are interrupted by regular strikes are also discriminated against in selection.

On the other hand, although discrimination on other than academic grounds undoubtedly still exists, the position has greatly improved. In the past, no qualifications at all were generally required from holders of high technical offices, other than affiliation to the right party—the party in power. The situation now is that applicants for high office have to be qualified, and then generally need the support of someone in power.

Drop-out and failure rates reach 80 per cent, despite a fairly rigorous entrance procedure. Some 30 per cent of candidates get a place somewhere. At some high prestige faculties there may be hundreds of applicants for each place, and a large proportion of students end up studying courses far removed from the discipline of their first choice. The phenomenon of the cramming school is growing as a result of the increasing competition for worthwhile places. Total student numbers were 160,500 in 1974, more than 97,000 in Lima's 15 universities. Ten years ago there was a national total of 74,000 students.

France

Reports say French students should have more help from UK

from George Morgan

NICE

Twin reports published recently by the British Council and the French government's *Office National des Universités* seem likely to pave the way for a major rethink in the field of student interchange between the United Kingdom and France. The reports, called for by a joint meeting of British vice-chancellors and French university presidents in November, 1973, outline current practice in student exchanges between the two countries and investigate the academic and financial obstacles to further development of existing schemes.

The *Office National* report is highly critical of what it calls "the disparity between the number of French students in Britain and the number of British students in France". The paper also advocates a number of changes in existing British regulations covering incoming French exchange students.

On the face of it, the French case appears fairly watertight. During 1973-74, 1,600 British students were enrolled at universities in France. Of these, 1,298 followed arts courses, while 123 enrolled in law, 85 in science and 50 in medicine. The figures quoted by the report do not include British students admitted to the *grandes ecoles* or following language and civilization courses designed specially for foreigners.

In contrast, only 250 French students were engaged in full-time study in British higher education. Of these, 47 followed undergraduate courses in universities and a further 68 were involved in post-graduate work. In the polytechnics there was a total of 132 French students of which 27 were signed up for advanced courses. Even taking into consideration the 492 students listed by the British Council report as being enrolled in other "private" institutions, the total of 742 falls well short of the number of UK students in France.

The discrepancy, as both reports point out, is largely due to contrasting methods of university admission and student financing.

In France access to university has been relatively easy both for French nationals and for overseas students. Up till this year, any UK student meeting the minimum requirements for admission to a British institution of higher education was automatically allowed to enrol for a French degree course. This occasionally meant that a candidate turned down in Britain was entitled to enter the French university of his choice. At post-graduate level, all holders of first or upper second honours degrees were allowed to register for a doctorate. Scottish students were required to give proof of a master's degree with any class of honours".

Recently, however, a new system of pre-enrolment has been introduced. From autumn this year, foreign candidates wishing to register at a university or *Institut Universitaire de Technologie* in France will be required to apply before May 1 preceding the anticipated period of study. Applications must be sent to individual universities, including at least one outside the greater Paris region. Applicants will then be informed of the university's decision before June 30.

The advantage of the new system, claims the French report, is that it enables French universities to implement a "systematic policy of reciprocity" by urging British institutions of higher education to offer French students in Britain similar opportunities and facilities to those available to UK students in France.

Financially speaking too, says the French report, the British student in France enjoys the best of both worlds. As the majority of these students are completing a compulsory year abroad as part of a degree course for a university in the UK, they retain the benefit of their l.e.a. grant often at maximum rate and with additional allowances to cover travelling expenses. In addition they French system of indirect subsidies to students. This means that tuition fees are low, the maximum rate amounting to only £20 including social security cover.

Accommodation in State-subsidized *cités universitaires* is available to many British students and costs only £13 per month, a third of the cost for comparable lodgings outside university residences. University restaurant food is cheap too, 44p for a four course meal, half the expense being borne by the State. The cost to the French government of British students in France is given by the *Office National* report as 5,000 francs per capita or an annual sum of £750,000.

According to a British Council officer in Paris, the differential between the amounts spent by the two governments on exchange students is offset to a large extent by the much greater number of jobs of *assistant* which are made available to French students every year in British schools. Over 3,000 *assistants* come to Britain each year from France as compared with the 1,500 United Kingdom students who go to France in a similar capacity.

The *Office National*, however, contests the validity of this claim. Although fewer British undergraduates come to France, their annual salary is much higher, £1,600 per year at present exchange rates as opposed to roughly £1,000 per year earned by French *assistants* in Britain. Also, French universities take on approximately twice as many *lecteurs* as are employed in higher education establishments in Britain.

In comparison with the British student in France, the French student hoping to spend a year in a British university faces what appear to be almost insurmountable financial and administrative hurdles. As the British Council report points out, overseas candidates for higher education are assessed in exactly the same way as UK students. Applications must be made a year in advance and are channelled through the UCCA. Applicants cannot be guaranteed a place and successful candidates have little choice as to the geographical situation of the university or polytechnic to which they will be sent.

British higher education establishments are also reluctant to accept students for less than a full three or four-year course. The combined effect of these regulations is to deter many would-be French applicants, the bulk of whom are *assistants* and *lecteurs* on short-term release from their home university in France.

The situation is further complicated, the *Office National* report suggests, by the conservatism of French academics. Universities in France are reluctant to recognize periods of study completed abroad in the assessment of a student's results. Consequently, a period of study abroad often adds an extra year to the student degree course.

According to the *Office National*, however, a "revolutionary step" has just been made. The recent decree governing the new two-year *maitrise* courses in applied modern languages, economics and mathematics allows for up to six months to be spent abroad as an integral part of the course. Examinations taken at a "foreign establishment" during this period can now be validated by the French university.

British universities and polytechnics already operate a similar system for their students in France although strict checks are kept on the level of academic achievement. This is done by organizing final examinations on the student's return to Britain or by dispatching British lecturers abroad to follow students' progress.

Among the proposals contained in the French report is a suggestion for the setting up of a joint Anglo-French commission to investigate the problem of the recognition of periods of study abroad.

According to the *Office National*, French students also suffer a severe financial handicap on going to Britain. Successful applicants must theoretically bear the full brunt of tuition fees. This year, these amounted to £250 per year for students on advanced courses. For next year the DES have raised the cost to £320. In all fairness, commented an *Office National* official, we have not been able to trace a single French student who was actually made to pay. polytechnics in Britain waived the fee very readily in the case of exchange students. However, the apparently high cost of tuition, it was said, acts as a deterrent to many prospective students from France who are aware only of the formal regulations.

Living costs in Britain appear high to the incoming French student accustomed to subsidized prices. In addition, only a handful of scholarships and bursaries are available for incoming French students, mainly at post-graduate level.

Nor can an overseas student qualify for a l.e.a. grant unless he has resided continuously in Britain for three years before starting a course.

As a result, interchange students must pay the full economic rate for food, accommodation and travel out of their own pockets. The United Kingdom social security system, the *Office National* report concludes, is the only feature of British higher education arrangements that presents a distinct advantage to the visiting French student.

Some British higher education establishments have recognized the disparity between the two systems and have made their own bilateral exchange agreements with universities in France in an attempt to right the balance. Frequently, British universities and polytechnics finance the incoming French student out of their own funds.

In the case of one-to-one exchanges for less than a full academic year, the fee paid by the outgoing British student has been retained to cover the cost of the visiting French student. At some universities such as Aston, Swansea and Southampton, accommodation is provided free. Others like Reading and Aberdeen stretch generosity so far as to offer incoming students allowances equal to or in excess of maximum l.e.a. grants.

Another formula for reducing the financial differential outlined by the British Council report involves courses run jointly by departments of business studies at home and abroad. Exchange students are financed by sources in their own country and fees are paid only to the home institution. The London Business School runs a three-sided scheme along these lines with the *Hautes Etudes Commerciales* in Paris and the Graduate School of Business Studies in New York. The LBS also provides free accommodation for incoming students.

The French report contains a number of proposals of its own aimed to rectify the imbalance.

One remedy advanced would be make the British student's maintenance grant available to the visiting French student. The DES, it is suggested, could then provide some alternative source of revenue for the British student travelling to France.

Failing this, British students could be allowed to keep their l.e.a. grants but the French government would require them to pay the full cost of tuition, food and lodging. The funds obtained in this way could then be used to subsidize French students in Britain.

While complaining of the financial and administrative divergences between the two countries, the French report recognizes the "excellence" of the British tutorial system and the personal attention given to students. If a larger number of students were able to benefit from those arrangements, the report adds, many of the existing difficulties could be overcome.

The report goes on to suggest that British universities could create a special category to cater for French students wishing to spend a year or less in the United Kingdom. While following courses and seminars along with their British counterparts, these students need not be given the same specialized guidance reserved for undergraduates following a complete course of study. At the same time, the report proposes that French universities should provide a more personalized form of tuition and guidance to exchange students from Britain.

Since the reports were published a number of private meetings between British and French officials have taken place. The atmosphere is said to have been open and friendly and a French representative declared that a number of mutually acceptable solutions have

Sweden

New programme will send key workers to college

from Mike Duckenfield

STOCKHOLM

Workers with at least four years' experience in one of six key Swedish industries are to be eligible for monthly state subsidies of between the equivalent of £150 and £220. The subsidies will allow them to sharpen their technical and administrative skills at eight experimental colleges.

The scheme was launched this month and initially catered for 330 workers. It is one of the lesser-known measures in the major U68 package of higher education and post-school reforms agreed by the Riksdag at the end of May.

Whilst the more controversial innovations are not to be implemented for another two years, there was considerable all-party support for the new colleges. The Government were confident enough to advertise courses and to start recruiting students two months before the reforms finally become law.

In the first year there will be eight vocational-technical colleges. Five of them will offer single-industry courses and three will cover two industries. All have been carefully located.

There are to be no new buildings. Some of the colleges will have to be housed in local upper-secondary schools with workers attending alongside 16 to 20-year-olds. Others will be located in university-level institutions including the technological university at Lulea in Swedish Lappland.

All courses except one will be full-time and will last for three 18-week terms. Students will have 40 hours of tuition a week.

About a quarter of the tuition will be on general topics such as Swedish, maths, economics and production. Some courses will also include physics and chemistry, and English will be an optional extra.

The rest of the courses will be split so that for every four hours of specialist tuition there will be one hour reserved for works visits and other similar projects.

Already 575 people have applied for courses this autumn, and 330 have been chosen. They will automatically receive paid educational leave and compensation for lost earnings. This will be taxed and additional state loans (of up to the equivalent of £73 a month) made available.

The education is seen as a continuation at a higher level of that available on two-year vocational lines in the upper secondary schools. Industries covered in addition to clothing and pulp and paper are steel, food, engineering and wood.

South Africa

The safest of three candidates is chosen as new chancellor

from Andrew Lycett

JOHANNESBURG

At the University of the Witwatersrand, the English-speaking university in Johannesburg, 6,000 members of Convocation have voted Dr B. L. Bernstein, former president of the Chamber of Mines of South Africa and former chairman of the Anglo-Transvaal Investment Company, as chancellor of the university.

He beat Dr Alan Paton, the author, and Mrs Helen Suzman, Progressive Party MP.

Dr Bernstein said afterwards: "To be worth the name, a university must be able to open its doors to people of all races. The essence of its nature is not merely to churn out graduates, but to train minds."

But opinion among some members of the university is that Convocation has opted for the safe candidate rather than a potentially controversial figure.

This reflects the attitudes of the South African universities towards the current changing political climate. Although the English-speaking ones have expressed liberal opinions and have stood out against the 1959 Act (which restricted the influx of black students into the universities), both staff and students seem to have been cowed.

An interim report of the de Vries Commission of Inquiry into South African Universities published at the end of last year suggested that universities might be fined if their students misbehaved.

During the same week the Afrikaanse Studentebond, the association of students in the Afrikaans universities, held a five-day conference on "Changes in South Africa".

Delegates agreed that they thought it was time for closer contact between Afrikaans and black universities, but editorials in the two main English-speaking Johannesburg newspapers commented unfavourably on their lack of commitment.

Nigeria

University expansion despite graduate unemployment

by Ronald Watts

The Nigerian Government is planning to establish four new universities in spite of growing signs of graduate unemployment. The Third Development Plan, launched recently, provides for an increase of the number of universities to 10.

There is also some pressure to have a university in every state, which would bring the total to 13.

Those who press for these increases have ignored the facts that in the southern states, graduates are finding jobs increasingly hard to obtain, and that, in the northern states, there is already great difficulty in filling existing places.

At present there is only one university for the six northern states—the Ahmadu Bello University at Zaria. The proposals involve three new northern universities—at Kano, Jos and Maiduguri—and one at Calabar in the extreme south-east.

They will be based on existing colleges and by 1980 should each have an annual intake of more than 2,000 students.

But graduate unemployment in Nigeria has been present for a number of years, mainly affecting arts graduates. The Federal Public Service Commission recently said that it could no longer guarantee jobs for graduates in natural sciences, engineering, agriculture and veterinary medicine.

Thanks to oil revenue, Nigeria has considerable resources for education—but money is not the main problem. Nigeria is desperately short of senior personnel, of building materials and equipment, and reliable and experienced contractors.

One healthy aspect of the job shortage is that some graduates may now be forced to start their own businesses.

France to keep *licence*

The *licence* is to remain an integral part of the French higher education diploma structure. After having considered introducing a two-year *licence*, then announcing its abandonment in favour of the four-year *maitrise*, M Jean-Pierre

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The Christopherson report on research and postgraduates

Some 18 months ago, the Commons Expenditure Committee published a report on postgraduate education to which the Government has not yet replied, although the report was debated in the House three weeks ago. Indeed during that debate Miss Joan Lestor, Under-Secretary for Education and Science, said she could give no decision on when a reply might be forthcoming.

In the circumstances, it is only reasonable that those with an interest in postgraduate education should take every opportunity to persuade Government of the force of their views. *The Times Higher Education Supplement* criticized the Expenditure Committee report for its narrow vision of postgraduate education, accusing it of being guided by the ring of the cash register without educational considerations. The same criticisms can be made of the recent Committee of Vice-Chancellors and Principals' report (text, page 7) although for different reasons.

The CVCP report sets out only to put the universities' position on postgraduate education; it is in fact really a policy statement and Sir Derman Christopherson, chairman of the working group which produced the report, has already said that the intention was to establish in printed form what the universities believe to be the proper basis for postgraduate education before the Government makes up its own mind on the subject and imposes its decision from above.

The Select Committee report and the Christopherson report differ on many significant points. In fact, the only argument to which they both subscribe is that prospective research students should show enthusiasm for their subject which goes far beyond merely having the right qualifications and nothing better to do for the next three years. The Select Committee wanted to see financial barriers to keep out the less than wholly committed—the CVCP is less precise nothing merely that: "Universities should ensure that the standard of the PhD is maintained."

The differences between the two reports are very marked. The politicians want an end to studentships and bursaries and a new system instituted which would combine an element of grant with an element of loan. The CVCP has nothing to say about loans and insists that postgraduate grants should be increased relative to undergraduate grants.

The politicians were anxious to reduce the number of students entering research immediately after completing their first degree, while the vice-chancellors state as their most significant article of policy: "Postgraduate education in the future should be based on the general principle that students who are qualified, suitable and keen to proceed beyond the first degree level should be enabled to do so."

The politicians were anxious to establish a postgraduate advisory council to monitor the implementation of their recommendations and to keep the system under review. Christopherson seems content that the research councils have managed to strike a fair balance between supply and demand in postgraduate numbers.

It would not be wise to dwell too long on the differences in attitude shown in the two reports. All one can say at present is that the views of two corners of the "postgraduate square", the politicians and the universities, are known and that it would be useful to know the definitive views of the other two corners, business and industry, and Government.

Sir Derman said in introducing the report that a definitive version would be produced later in the year, and it is hoped that the revised version will incorporate some of the views of the other corners.

It would certainly be useful to know quite what business and industry thinks of the postgraduate system. For in both reports the industrial attitude seems at best a lazy acceptance of the status quo. The vice-chancellors explain that they must sell their master's degree to industry because "it is not well enough understood by employers and the general public".

It is now seven years since the Confederation of British Industry in conjunction with the CVCP sponsored a report on postgraduate courses; it may well be time for another. It would be a particularly appropriate development at this time for it is clear that of the kinds of postgraduate work supported in the universities, the chief discontinuity occurs between research and taught courses.

The latter include postgraduate certificate work, post-experience courses, taught professional courses and taught MSCs. These all fall legitimately into the universities' province and should not be subsidized by the universities but should be paid for by the beneficiaries—which does not necessarily mean the students but their employers. Such courses should be charged to employers at the full economic rate.

Research is another matter. The vice-chancellors emphasize the importance of research to the intellectual coherence of the universities and they are completely justified.

Research is, in fact, what distinguishes the universities from other tertiary teaching institutions. If research is allowed to fail in the universities—and it is under attack from all sides at present—the best researchers will be lost to the research institutes and the universities will become advanced sixth form colleges. If universities were to be selected for special treatment in a harsh economic situation the only sensible criterion for distinction would be the quality of the research undertaken.

But both the CVCP and the Select Committee are right to suggest that the quality of this research must be monitored and maintained, and the CVCP suggestion that all research students should undergo some form of assessment at the end of their first year is sound. It might be that all PhD courses should comprise two parts, a one-year master's course, combining elements of research, and taught courses which must be successfully completed to allow entry to two further years of research leading to a thesis.

This emphasis on maintaining standards permeates the CVCP report and is sensible when the university system is being squeezed both in terms of financial support and staff numbers.

It is clear, for example, that staff numbers will increase comparatively slowly in the next few years, which seems to be the stimulus behind the recommendation in the CVCP report that the universities should give a mark of distinction to candidates completing an outstanding piece of PhD research. The implication is that university posts will go in the first instance only to holders of those "starred PhDs".

What is clear from all this is that postgraduate education is too important to be left to isolated reports produced by vested interests. Christopherson has suggested a "Robbins" principle for postgraduate education. It may be that a "Robbins" report is needed as well.

LETTERS TO THE EDITOR

Arts versus science finance

from Dr H. Shukman

Sir,—You report the conclusion of Professor Alan Merrett (*THES*, July 25) that society's investment in higher education is an economically poor one. Professor Merrett identifies economic return as income taxes paid by our students in later life. It seems, therefore, fitting to ask ourselves what sort of students are most likely to be paying high taxes, if the balance of resources within our universities is to reflect social cost-benefit.

As a first step we can put at the bottom of the scale all those reading science subjects, for it is surely not research chemists and engineers in industry, nuclear physicists or even most medical doctors who pay really significant income tax. The categories most readily identified as high taxpayers are, among others, merchant bankers, top advertising agents, successful barristers, film and pop stars, bookmakers and professional gamblers, industrialists and entrepreneurs.

Of these groups, those which have most likely been at a university have probably read law, politics, philosophy, economics, history, English, or modern languages, and it is unlikely that they will have pursued science degrees.

Thus it is the arts faculties which are the seedbed of high income-tax payers and hence the source of society's best return for its money. Does this not suggest that university administrators should rethink the priorities by which the science departments regularly receive the lion's share of our dwindling resources, while the more high-geared arts faculties have to make do with a pittance?

Yours faithfully,
H. SHUKMAN,
St Antony's College,
Oxford.

Comparing unit costs

from Professor M. L. V. Pitteway

Sir,—I was at first surprised to find Brunel University among the more expensive in your list (*THES*, July 25). Of course, being small might account for part of our seeming extravagance, our student/vice-chancellor ratio, for example, being more favourable than most.

My attempts to reproduce the figure you quoted, however, were thwarted until I noticed that you were quoting the average grant for each "full time student". As it happens, Brunel University serves a large number of postgraduate students who attend our advanced courses on a part time basis, so in our case the number of "full time students" is very much less than the number of "full time *equivalent* students".

Could it be that your listing simply shows which universities have a large proportion of part time students, rather than the difference in unit costs you suggest by your headline "State gets best value from Bath and Durham"?

I was even more surprised to note that the comparatively cheap sounding figure you quote for the polytechnics of Scotland was computed as the "average net recurrent expenditure per full time *equivalent* students". Obviously, if it is necessary to go to such lengths to make a comparison look favourable to the polytechnic sector, there must be something to hide?

Yours faithfully,
M. L. V. PITTEWAY,
Head of Department of Computer Science,
Brunel University.

The Department of Education and Science confirmed this week that the figures for Scotland were not comparable with those for England and Wales, since the Scottish statistics, unlike the others, include part-time students.—Ed.

London's draft Bill

from Mr J. Stewart Cook

Sir,—Your leading article (*THES* July 25) with much of which I agree, is in one respect misleading in that it suggests that the draft Bill relating to the constitution of London University has the object of freeing the university from a requirement to "circulate a copy of any new statutes to the court, convocation and the governing bodies of the schools".

It is not the intention of anyone on the senate, as I understand it, to try and dispense with the obligation to consult with the court and convocation in making new statutes and there has never been any such obligation, nor does one exist in the University of London Act, 1926, in relation to the governing bodies of the schools.

The purpose of the draft Bill is certainly to free the university from a restriction of its statute-making powers but the freedom sought is from the provision in the Act (section 4(1)) that any statutes made must be in general accordance with the report of the committee (i.e. the Hilton-Young departmental committee appointed in 1924).

That any university should be shackled in its legislative function by the report of a committee published half a century ago is surely an absurdity which should be swept away as soon as possible.

At the same time, however, it is open to considerable doubt whether the senate should possess a wholly unlimited power of changing the basis of government of the university. One solution might well be to have "reserved" statutes which could only be changed with the agreement of the schools, the court and convocation.

For the university to behave as if its decisions need bear no relation to the views of the government which provides it with the overwhelming bulk of its finance, is to practise a form of collective self-deception which will damage its academic performance far more than would a policy based on a realistic assessment of the position of universities in relation to the community which sustains them.

Yours faithfully,
J. STEWART COOK,
Member of senate and of Murray consultative committee,
University of London.

Manpower planning

from Mr A. Tattersall

Sir,—The DES, in the person of Lord Crowther-Hunt, has been emphasizing the need for the universities to have regard to national manpower needs in planning their future intakes of students to their various faculties.

Your issue (*THES* July 4) records that:

●There is consternation among teachers' organizations at the prospect that sudden contraction in teacher training will throw 2,000 college of education lecturers out of jobs, and that a sizeable proportion of this year's college output will not get jobs;

●Open University staff face pay cuts, and the OU will have to turn away over half of its new candidates, though it is attracting the children of the workers and others who cannot get higher education by other means;

●The county of Worcester and Hereford is indignant at the way the DES is threatening closure of two out of three colleges of education.

Yet very few heads with whom I have spoken lately are happy at their staffing position.

We know that the country is in dire financial difficulties, and that these make planning difficult; but the DES's own performance in the matter of teacher training does not enhance its credibility when it starts telling the universities what they ought to be doing.

And how much sense does it make to start the OU and then, when it has proved itself, starve it of resources?

Another thing: Lord Crowther-Hunt tells us that if, in the universities we reduce our postgraduate numbers by 1 per cent we can take 2,500 more undergraduates. What a typical university department probably has 10 postgraduates working for research degrees and perhaps another 20 doing an MSc or MA course by examination. If we cut these numbers by 1 per cent we shall throw out 0.1 of a research student and 0.2 of an MSc student.

How long do we have to go on listening solemnly to the exponents of what is called "broad brush" planning?

Yours faithfully,
A. TATTERSALL,
Secretary,
University College London.

Scholarship

from Mr E. W. Cooney

Sir,—Since academics themselves so often talk about their work largely in terms of teaching and research, as if there were little more to it than those activities, I suppose Mr Hewton (*THES*, July 25) is not to be blamed for discussing improvements in teaching in the same context.

Yet to do so omits a vital factor, scholarship, which is neither the one nor the other (though partly dependent in practice on both). Scholarship provides the distinctive, unifying principle of universities as institutions. The mastery of a field of knowledge is a scholar's endeavour and it is an enterprise which is open, in principle, to anyone who is willing and able to recognize the disciplines involved and to accept them.

There are evidently many means whereby scholars may communicate their common interest and the improvement of such means, about which Mr Hewton makes some interesting suggestions, is certainly important.

But first things first. Maintenance and enhancement of scholarship are the *sine qua non* of a university's work, from the undergraduate in his first year to the emeritus professor. Teaching and research, whether taken together or seen in opposition, do not subsume this scholarly activity, as contemplation of a university library, for instance, quickly suggests.

A body of knowledge is there to be grasped. Of course few scholars worth their salt will be entirely indifferent to opportunities for specific research projects. Most, too, will, I believe, acknowledge that teaching is also a stimulus to one's own learning. But the cultivation of one's appropriate knowledge is neither of these in itself and does not absolutely depend upon them.

The best ways to provide for the cultivation of scholarship must therefore be the fundamental question when one is concerned even with the particular question of the improvement of teaching. I suggest that the first requirement for some students coming fresh to university is to be helped in a constructive spirit to understand for themselves what any scholar needs to acknowledge: the extent of one's ignorance and the demands of one's discipline.

The difficulties of some undergraduates seem to me to arise at this point, particularly in their first year or so, and reflect, perhaps, changes in the assumptions and practices of some secondary schools. If so, the remedy is not necessarily to call into question present teaching practices as a whole but to put more emphasis on early understanding of what is involved in a discipline: first submission to its logic, then mastery to the extent of one's abilities.

Yours faithfully,
E. W. COONEY,
Reader in economics and social history,
University of York.

School science

from Mr Michael Thain

Sir,—I was delighted to find Professor Margaret Gowing (*THES*, June 6 and July 11) advocating that undergraduate science students should be encouraged to read into the history of their subjects.

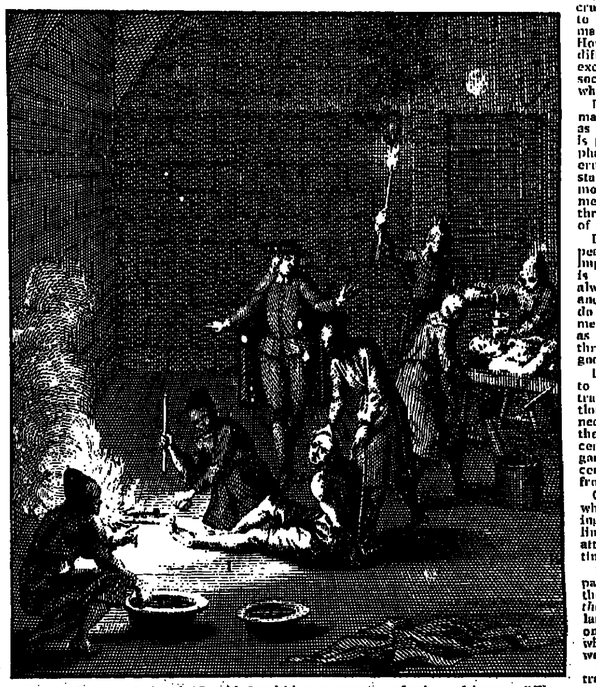
My belief is that the blame for ignorance of historical perspective by these students is to be laid squarely at the door of school science—and A-level boards in particular.

The current emphasis in A-level science syllabuses upon rapidly expanding fields (e.g., developments and differentiation in biology) is strangling any perspective which pupils may be gasping to achieve. How, I ask, can recent discoveries be interpreted except in the light of the past? And how much of the past do boards think we can cover at school under the present inordinately top-heavy and all too contemporary philosophy that what is past is dead? For such is implied.

Yours sincerely,
MICHAEL THAIN,
Biology Department,
Harrow School.

'Doctors' of the mind or leeches of the soul?

David Martin discusses the ideas of Thomas Szasz and his critique of the social definitions used to legitimate the treatment of mental illness



The use of torture during the Spanish Inquisition to extract confessions of heresy. "The age of faith had its inquisitors; the age of science has its quasi-merical definitions of the allowed frontiers of normality."

Most psychiatrists suffer from a trained incapacity to understand social organization and philosophical discourse. Too many *soi-disant* scientists of the mind have a fixed antipathy to the mind's rational operation and a rooted resistance to a reasoned comprehension of the social context of mental activity. I add one further disability: an ignorance of and a distaste for the disciplines of historical understanding. Put it another way: most psychiatrists do not understand time, logic or social space.

Thomas Szasz is an exception, and he confirms the rule by arguing that psychiatry suffers from the deformations just mentioned.* He also confirms the rule by himself paying attention to history, logic and society. He writes in a manner quite inimical to the normal psychiatric style. There is no trace of the vatic slimituess of much psychiatric imputation, but a direct attachment to clean argument. The arguments have logical form, the citations ascertainable empirical reference, the sentences the rhythm and energy of rational and liberal man.

Szasz exemplifies the usual stylistic difference between those who espouse a soggy and lethargic libertarianism and those who actively care for the promotion of liberty. Of course, his history may be oversimplified, his empirical generalizations incautious, his logical playfulness too exuberant. My point is that he offers his opponents one basic courtesy: the opportunity to show he is wrong. It is this which finally separates him from most of his psychiatric brethren.

Thomas Szasz is not a systematic thinker but someone with a lively and combative intelligence who frames certain hypotheses about man in time and in social context. Hypotheses and historical generalities on the scale required are necessarily crude, particularly when they are concerned with the complex interplay of social constants and historical particulars.

Szasz is trying to isolate certain key recurrent social processes and then to show how they undergo semantic and categorical transformations which alter much of their colour, while leaving a great deal of their social substance. He is pushed into such considerations by a much more limited aim, which is the exploration of the specific paradox of the supposedly humane treatment of the mentally ill in American society. What problem is it that underlies our treatment of the mentally ill?

The issue is simple. The concept of mental illness began its career with a humane intention which has now doubled back on itself. The underlying notion was that not everyone was fully responsible and therefore could not be held to account. This was extended to a position which said that when all the factors had been taken into consideration you could not expect a man to do otherwise than he did.

Now in order to be just everything needs to be taken into account, but once this is done the presuppositions of the wider justice undermine the very concept of justice itself. If no man can do otherwise then the concept of unjust judge disappears with the concept of blameworthy criminal.

Moreover, when *illness* is imputed to the criminal (or to the deviant) society is able to treat him as less than human. He can then be "reformed"—literally—in respect of his whole character rather than punished in respect of his specific act. He is susceptible to remoulding, and this is inevitably done in terms of the society's ordinary and somewhat arbitrary moral requirements, supplemented by the dominant notions of the psychiatric sub-culture, and—it may be added—of its sub-accentracted agents in social work.

The consequences are two-fold. First, as the prison is converted into a mental hospital so the mental hospital is converted into a prison, and moreover a prison without the limitations and rights attaching to the ordinary usages of law. Secondly, as the language of denunciation is converted into the language of disease, so the language of medicine is reconverted back into a vocabulary of denunciation. The opponents of this vocabulary use it to bind and loose whom they will. They excuse and they denounce.

Examples lie on the table in front of me perfectly illustrating the Szasz case. On page three of *The Times* for May 26, Mr John Stonehouse offers us the psychiatric excuse He has now achieved a return to "mental normality with a difference. The old personality has been enriched by the objectivity of the second parallel personality."

Another example involves a psychiatric "analysis" of the personality of the American fundamentalist. I have my own opinion of fundamentalism, but the supposed psychiatric analysis is no more or less than philosophical social and personal disapproval clothed in the language of psychopathology. It is denunciation disguised as description. This is characteristic of the double-standard within the psychiatric system (or rather, the psychiatric systems).

Szasz offers his own examples. The drug *addict* is excused, the drug pusher is denounced, whereas on the general premises of psychiatry, let alone a consideration of the proper blame attaching to each activity, no such sharp moral distinction can be maintained. In the end, of course, the binders and loosers turn on each other, each defining their own psychiatric sect as the custodian of health and the other sects as subtle purveyors of disease.

Whenever ideologies enter the warp and woof of relationships they are translated as control. Szasz analyses the repressive shift in the use of "addict", and his analysis could be complemented by Professor Murray Edelman's recent account in *Politics and Society* of the way words make one group's therapy another group's repression.

The helping professions deliver condign punishment in the terminology of salvation Edelman points out that the term "pre delinquent" permits surveillance prior to misdemeanour, while the convention that nobody is ever declared cured or whole permits surveillance long after.

To bind and to loose can be defined as a "religious" activity. This is partly a matter of how we choose to use the word "religious", but Szasz puts the point in a wider frame "Religio" means to bind, and psychiatry is the "modern form of binding", which, because it is modern, has to use the legitimacy of science as comprehensive cover for its activities. The age of faith had its inquisitors; the age of science has its quasi-medical definitions of the allowed frontiers of normality.

We are now introduced to a broad thesis concerning the great transition from faith to science and from discrimination against heresy and witchcraft to discrimination against madness. It is here that he delineates some of the social constants and describes the categorical and semantic shifts under which these continue to operate.

In the preface to his anthology of the treatment of the insane *The Age of Madness* Szasz puts the point with exemplary clarity: "To be truly human now means to worship Science (Technology, Progress), to be virtuous means to be healthy (happy), and to be well means to be mentally sick (unhappy)."

This is a statement of a particular concept of secularization, and I would like to restate in my own terms Szasz's underlying contention that certain social constants underlie the great change, before I go on to give examples of these constants.

The myth of change, including the great enlightenment myth of secularization, partly exists to mask the fact that so much remains the same. The categorical and semantic shift is so obvious in order to obscure what ought to be equally obvious: the fundamental continuities. The very fact that we are forced to trace the historical contour through the eyes of the enlightenment myth is just one illustration of the extent to which things remain the same.

Man still lives by myth; and the myth of demystification is one of the major agents of obfuscation. Every great myth encapsulates the past within the categories of its own promise and this is as true of Marxism and Freudianism as it is of Christianity. This encapsulation destroys our capacity to look at the historical record and to recognize the permanent recalcitrance against which the new myth attempts to move.

Myth is the precondition of change and activity, but it also destroys the possibility of its own fruition. Each great system is a prisoner of its own promise, and so becomes a potent agent of demystification. At the same time it does contain along its margins countervailing elements.

Thus is was a new seriousness of faith which undermined the Age of Faith; and it is reason which now exposes the social reality of the Age of Reason. Which is not to say, of course, that the countervailing elements are themselves devoid of delusion.

What then are some of the recalcitrant social constants against which both faith and reason initially rauge themselves and with which they eventually collude? I focus on the scapegoating mechanism because it relates very closely to Szasz's most recent book on our attitude to prescribed and proscribed drugs.

Scapegoating includes two other fundamental processes: the demarcation of the frontier of the social whole and the drive to completeness involved in the definition of panaceas and of what Szasz calls panapathogens. Society must exist by revolving around inclusive positives and negatives. (For a parallel exposition from the perspective of literary criticism I would cite Kenneth Burke, not to mention a debt to Mary Douglas.)

The Greek for scapegoat was "pharmakos" and the ritual act of scapegoating was a crucial "therapeutic" intervention designed to protect individuals and communities and maintain bodily and corporate integrity. However the ancient practice of scapegoating differs little from the modern practice, except in degrees of realism: the ancient society which engaged in scapegoating knew what is was up to.

It is the special characteristic of modern man to dress up the scapegoating mechanism as knowledge. What relates to "pharmakoi" is pulled in under the scientific umbrella of pharmacology. Though we celebrate the modern differentiation of spheres, church from state, medicine from religion, yet in the most modern of societies, the state, religion and medicine collaborate practically, and also through their social definitions, in the task of social regulation.

Law, the vehicle of social control, may appear almost wholly secular, but it is in fact impurtantly religious and political. Especially is this the case with respect to what has always been important for the body politic and the body ecclesiastical: the substances we do and do not allow in the body. Life, and that means social life, has always been thought of as achieved by a negative and a positive, the thrusting out of evil and the taking in of the good.

Food and drink are the symbolic objects to which this positive and this negative are transferred. For instance our present persecution of drug users and pushers belongs to this necessary function of purification. However, the negative is of course also a positive: the ceremonial expulsion of the negative from the garden of sanity is matched by the positive ceremonial expulsion of established society from the counter-cultures.

Once upon a time man called things "holy", which was his covert, prescientific way of trying to be clean. Nowadays, we insist on cleanliness, not realizing the extent to which an attempt to be "whole" and "healthy" is continuous with the ancient desire to be holy.

We all need, as man has always done, a panacea: aspirin or prayer. Both ways out, they—and we—are taken in. If you eat of *that* you die, said the God of Religion; similarly so science, in relation to drugs. We shall only become secular, I s, make our myth true, when we demythologize our attitude to what we take in and what we expel.

Here we move to Szasz *On Liberty* and the transition is best marked by some comment on the gloss he gives to "all who take the sword shall perish by the sword". He translates this as illustrated by the way physicians, who act as agents of control, are then caught up themselves in the web of social control. The God of Immoderate Health, for whom alternation is synonymous with improvement, himself requires the sacrifice of the physician's own autonomy.

There are certain other crucial processes which I have not space to set out. For, example, there are the accelerating cycles of threat and control, which in the end engulf the specific agents of control—in Szasz's example the doctors themselves. Then there is the difficulty of maintaining a *via media*, whereby the vocabularies of science and faith, holiness and health, do not push beyond their proper limits and spheres in a manner destructive even of themselves.

At the same time societies cannot exist without some symbiosis between dominant vocabulary and repressed vocabulary. This is a point best illustrated by the recent debate over exorcism in which one set of believers and non-believers maintained that the vocabulary of demonology had been supplanted by psychiatry while another set maintained the two vocabularies were parallel to each other.

A careful critique of his contentions is impossible, especially his characterization of all mental illness—apart from specific brain disease—as translatable into "problems of living", and his extreme Millsian views about the need to tolerate the drug culture.

Nevertheless the clarifications and distinctions he proposes seem to me important. Secularity and demystification can only be achieved in this area when we recognize the vital difference between pharmacology and ceremonial chemistry. With characteristic logic Szasz claims that Epsom salts is inorganic chemistry as drug addiction is to pharmacology. We should not confuse the chemical properties of drugs with their social use and significance.

The distinction is perhaps too sharp, the line too precise, but the warning is necessary. And so long as we convert our problems of living into quasi-scientific technology, so long will the "doctors" of the mind succeed in practising as the leeches of the soul. Indeed, so long as we fail to see ourselves and others as responsible we hand all of us over to "experts" manipulating us for our own and society's "good". So doing we make a mockery of the word "good".

The author is professor of sociology at the London School of Economics.

Ceremonial Chemistry. The Ritual Persecution of Drug Addicts and Pushers, by Thomas Szasz. Routledge, £4.95. ISBN 0 7100 8122 7.

Law, Liberty and Psychiatry. An Inquiry into the Social Uses of Mental Health Practices by Thomas Szasz. Routledge, £4.95. ISBN 0 7100 7922 2.

The Age of Madness. The History of Involuntary Hospitalization presented in selected texts, Thomas Szasz (ed.). Routledge, £5.95. ISBN 0 7100 7993 1.

NOTICE BOARD

Chairs

Dr J. J. McCutcheon, senior lecturer, department of actuarial mathematics and statistics, Heriot-Watt University, has been promoted to a personal chair of actuarial studies.

Dr Anna M. MacLeod, reader in brewing, department of brewing and biological sciences, Heriot-Watt University, has been promoted to a personal chair of brewing.

Professor I. G. Macdonald, Fielden professor of pure mathematics, University of Manchester, has been appointed to the chair of pure mathematics at Queen Mary College, University of London, from October 1.

Mr A. D. G. Smart, county planning officer, Hampshire County Council, has been appointed to the chair of urban planning, University College London, from October 1.

Dr K. E. Webster, reader in anatomy, University College London, has been appointed to the chair of anatomy at King's College, University of London, from October 1.

Mr J. T. Dannatt, architect in private practice, has been appointed professor (part-time) of architecture at the University of Manchester from October 1.

Mr Michael J. Artis, at present professor of applied economics, University College Swansea, has been appointed to the chair of economics from August 1, 1976, at the University of Manchester.

Mr Ian Isherwood, at present a consultant radiologist, Manchester Area Health Authority (teaching) and lecturer (part-time) in diagnostic radiology, University of Manchester, has been promoted to the newly established chair of diagnostic radiology from a date to be arranged.

Dr R. K. Follett, reader, department of zoology, University College Bangor, has been promoted to a personal chair.

Dr M. J. Brown, director of social services, with the status of senior lecturer of the department of social administration of the University of Birmingham, has been appointed to the chair of social administration and social work, Queen's University of Belfast.

Deaths

Professor Maurice Freedman, Professor of Social Anthropology at Oxford University and head of the Institute of Social Anthropology and a fellow of All Souls, died on July 14 at the age of 54.

Appointments

Universities

Queen's Belfast

Lecturers: D. Glyndwr Wall (law); R. J. Manning and J. M. P. Fitzgerald (law). Temporary lecturers: H. O. Carroll (law); J. L. Wheale (psychology).

Edinburgh

University demonstrators: M. A. R. Kinick, N. T. M. Galloway (anatomy). Temporary lecturers: B. W. A. Williamson (clinical surgery); S. A. Petersen (psychology); H. Sibisi (social anthropology); Lecturers: E. J. C. Emslie (European government studies); M. J. Kowalik (preventive dentistry); R. S. H. Girdwood (Scots law); R. W. Bingham (veterinary pathology). Foreign language assistants: R. Portillo (Hispanic studies); Miss M. Giacon (Italian).

Kent

Deputy vice-chancellor: Professor G. R. Martin (reappointed from August 1, 1975); Master of Eliot College: D. M. Taylor, senior lecturer in philosophy.

Manchester

Lecturers: N. H. Griffin (Spanish); M. L. J. Sherer, A. J. Southworth and J. D. Whitman (accounting); D. G. Leslie and G. Zis (economics); L. Parker and C. P. Yates (law); E. Szabadi (psychiatry); W. J. Hume (clinical oral medicine).

Oxford

Craven fellowship 1975-77: P. Pattenden.

Strathclyde

Senior lecturers: J. H. Johnson (architectural and building science); T. D. Williams (economics). Lecturers: R. Brown (natural philosophy); J. J. Stewart (pure and applied chemistry); B. F. McHugh (bioengineering unit); R. Anderton (applied geology); L. S. Rosenburg (urban and regional planning); A. L. Harvey (physiology and pharmacology); J. Kelly (economics); J. T. Buchanan (operational research); F. A. H. Oger (modern languages); O. M. H. Jackson (marketing). Research fellows: G. A. Qureshi (civil engineering); D. N. F. Bell (Fraser of Allander Institute); H. Arugaw (David Livingstone Institute of Overseas Development Studies); P. Silk (Strathclyde area survey unit).

Polytechnics

Middlesex

Dean: J. Reid (art and design).

General

The following will take office as chairmen of divisions of the Institution of Electrical Engineers:—Professor J. L. Douce (control and automation); Mr I. L. Davies (electronics); Mr M. N. John (power); Mr J. R. Thompson (science, education and management).

Sir Ian Gourlay, former commandant general of the Royal Marines, has been appointed chairman of the international committee of the United World Colleges Project.

Forthcoming events

The ATCDE education section are organizing a conference on "Education Studies in Action" to be held at Stockwell College, Bromley, from September 15-18. Speakers will include Professor Roger Webster, Alun Evans and Martin Shipman. Fee: £19.70. Further details and application forms from Mr Tony Goddard, Poulton-le-Fylde College, near Blackpool, Lancashire.

* * *

Cranfield Institute of Technology are organizing a conference on "Police and Society in Australia", to be held at the institute from September 26-28. The purpose of the conference is to combine those whose functions and interests are related to the work of the police service: social, community and youth agencies; to teachers, magistrates and probation officers. Further details from: Audrey Brown, Cranfield Institute of Technology, Cranfield, Bedford.

* * *

A weekend conference "First Steps to Management" is being organized by the London graduate and student section of the Institution of Electrical Engineers and will be held at Brunel University, Kingston Lane, Uxbridge, Middlesex, from September 5-7. The conference will be of special interest to those who wish to enter management. Delegates may be able to obtain sponsorship from their firms. Fee: £15 (including VAT). For further information contact: Annmarie Cunningham-Swandell, press and public relations officer, The Institute of Electrical Engineers, Savoy Place, London WC2R 0BL.

* * *

The second IFIP World Conference on Computers in Education will be held in Marseille from September 1-5. It aims at bringing together people concerned with the many possible roles of informatics in education. The conference is at the Faculté de Medecine de La Timone, 27 Boulevard Jean Moulin, Marseille, France. Registration forms from: AFCEC Universités Paris Dauphine, Avenue de Pologne, 75775 Paris Cedex 16. Registration fee: 600Fr.

* * *

An international conference on microteaching will be held at the Berkshire College of Education from September 16-18. Registration will take place on September 15. Fee: residential delegates £30, non-residential delegates £15. Further details from: Mr Trott, Woodlands Avenue, Earley, Reading.

* * *

The Institute of Medical and Biological Illustration are organizing an international conference on audio-visual communications in the life sciences, to be held from September 16-20 at the University of Warwick. The conference is for anyone engaged in the life sciences as a practitioner, teacher or researcher. Booking forms are obtainable from IMBI conference secretary, Department of Medical Illustration, St Bartholomew's Hospital, London EC1A 7BE.

Honorary degrees

Universities

Bristol

MA:—V. May and G. Twist

MMus:—G. Harker

DSc:—Professor J. Bruner (social sciences); Dr D. Kuchemann (engineering) and Dr G. Herzberg

LLD:—Sir P. Scott; Mr R. S. W. Clarke; The Bishop of Bristol and Lady Spencer Churchill.

Edinburgh

The title of honorary professor have been conferred upon: Dr D. Roberts, librarian of the National Library of Scotland; Dr N. W. Simmonds, director of the Scottish Society for Research in Plant Breeding.

LLD.:—Professor Sir Hugh Robson, principal of the University of Edinburgh.

Liverpool

Honorary degrees were conferred on the following:— J. W. MacDonald, assistant curator/lecturer, Lady Lever Art Gallery, Port Sunlight; The Most Rev and Rt Hon S. Blanch, Archbishop of York; W. J. Lyon Rushworth, chairman and managing director of Rushworth and Dropper Ltd; Sir H. Massey, Quain Professor of physics, University College, London; Her Honour Dame Rose Heilbron, Judge of the high court, family division.

Course news

The department of library and information studies at Loughborough University of Technology proposes to offer residential courses from September 6-26, on indexing, bibliography, management, mechanization, computers in information science. Each course to be one week's duration and students will be able to take one or two courses. Fee: £56.00. Further details from Professor P. Havard-Williams, department of library and information studies, Loughborough University of Technology, Loughborough, Leics, LE11 3U. A five-day post experience course in petroleum engineering will be held at Imperial College of Science and Technology, Prince Consort Road, London SW7 2AZ, September 15-19. The course is suitable for petroleum engineers in early career stage. Fee £75. Applications for admission to the registrar, Imperial College, London SW7 2AZ.

* * *

A two-day residential course on management in property development will be held at Whiteknights Hall, University of Reading, Berkshire, from September 19-21. The course will be at the role of the project manager considerable detail by examining the organization of development in the public and private sectors and the knowledge and skills of developers. Fee: £72.00 plus £5.76 VAT (inclusive of accommodation and refreshments). Further details from: Mrs P. Blake, Centre for Advanced Land Use Studies, College of Estate Management, Whiteknights, Reading RG6 2AW.

* * *

A 16mm film production course jointly organized by Cinephoto Film Productions Limited and the University of Salford will be held from September 21-27 at the university. Course members will need basic knowledge of film making and be prepared to make a film for public showing. This will demand a commitment of at least 16 hours and so the course is fully residential. The cost of the course is £117 including tuition, film and negative stock and accommodation. Further details from: Administrative assistant (short courses), Room 2, University of Salford, Salford M5 4WT.

Noticeboard is compiled by Patricia Santinelli and Myrna Monsurate

Open University programmes August 2 to 8

Saturday August 2

BBC 2

7.40* Ecology: Alkaloids: A limestone valley (AS03): prog 09).
8.05* Arts foundation courses: Perception (A100): prog 35).
8.30* Mathematics foundation course: Relations (M100): prog 19).
8.55 The early Roman Empire and the rise of Christianity: The establishment in Britain (AS01): prog 06).
9.20 International politics and foreign policy: Territory, security, conflict: Case studies: Golan Heights (DX322): prog 06).
9.45 Age of revolutions: Ingres (A302): prog 06).
10.10 Topics in pure mathematics: A rational approach to the square root of 2 (M202): prog 24).
10.35 Elementary mathematics for science and technology: Buckling. (MST281: prog 11).
11.00 Geochemistry: Chemistry of rocks (S2-2: prog 01).
11.25 (UC) Properties of water (S2-2: prog 01).
11.50 Statistics: an interdisciplinarity approach: Linear regression (MDT241: prog 06).
12.15 The end of Rome: The Resistance (A301: prog 12).
12.40 Introduction to psychology: Search for the author (DB361: prog 08).
13.05 Electromagnetics and electronics: Transmission lines: Impedance matching: coaxial stubs (T262: prog 13).
13.30 Principles of chemical processes (CP102: prog 14).
13.55 Introduction to technology: Loading and bending of beams (T241: prog 12).
14.20 Physical statistics and development: Thermodynamics (S342: prog 06).

RADIO 3 (VHF)

7.00 Mathematics approach to computing: Filing systems (M361: prog 06).
8.20 Regional analysis and development: Determining regions: Procedures for regional development (D342: prog 06).
8.45 Social analysis and development: Urbanization (D342: prog 06).
9.00 Science foundation course: Computers and control (S100: prog 05).
9.25 Technology foundation course: Materials and structures (T100: prog 07).
9.50 Mathematics foundation course: Statistics (M100: prog 29).
10.15 Linear mathematics: Matrices (M255: prog 06).
10.40 Mathematical methods for science and technology: Buckling (MST281: prog 11).
11.00 Computers and computing: Getting the best out of hardware (M361: prog 07).
11.25 School and society: Anatomy of change (D304: prog 06).
11.50 Technology foundation course: Transducers for servos (T100: prog 08).
12.15 Linear mathematics: Right transformations (M255: prog 07).
12.40 Mathematical methods for science and technology: Buckling (MST281: prog 11).

RADIO 4 (VHF)

Additional programmes for North Scotland and parts of Wales
9.20 People and organizations: Army II (T262: prog 06).
9.40 Open Forum.

RADIO 3 (VHF)

11.00 Renaissance and reformation: Calvin and the Calvinists (A202): prog 23).
11.20 The curriculum: content, issues and innovation: The hostile environment (E323: prog 06).
11.45 Science foundation course: Energy and the universe (S100): prog 06).
12.10 Arts foundation courses: The Princess and the Philosopher (A100): prog 30).
12.35 Mathematical foundation course: Relations (M100): prog 19).
13.00 Renaissance and reformation: Calvin and the Calvinists (A202): prog 23).
13.20 The curriculum: content, issues and innovation: The hostile environment (E323: prog 06).
13.45 Science foundation course: Energy and the universe (S100): prog 06).
14.00 Decision making in Britain: Overcoming problems with the exercise (D205): prog 06).
14.20 The digital computer: Computers and people (T262: prog 06).
14.40 Making sense of society: Science as a social institution (D101: prog 33).
15.00 Age of revolutions: Debussy, Berlioz and Paganini (A302: prog 07).
15.20 Urban development: Social perception and housing (Chicago) (D101: prog 24).
15.40 History of architecture and design 1890-1939: Pierre Chareau: Maison de Verre (A305: prog 10).
16.00 National income and economic policy: Targets: Inflation—the Arnen-Thee case (D282: prog 10).
16.20 People and organizations: Army II (T262: prog 06).
16.40 Language and learning: Language and thinking (E262: prog 11).

RADIO 3 (VHF)

Additional programmes for North Scotland and parts of Wales
24.00 Renaissance and reformation: Calvin and the Calvinists (A202): prog 23).
00.30 Age of revolutions: Debussy, Berlioz and Paganini (A302: prog 24).
00.40 The Early Roman Empire and the rise of Christianity: The Britons under Rome (A201: prog 12).

Sunday August 3

BBC 2

7.00 Introduction to materials: Car body (T262: prog 05).
9.05 Religion, ideals and values: Religion, politics and society (D102: prog 11).
9.30 Science foundation course: The Sirius magnetic field (S100: prog 06).
9.55 Technology foundation course: Motion (T100/TP171: prog 06).
10.20 Mathematical approach to computing: Sorting algorithms (M361: prog 06).
10.45 Systems behaviour: Sheep production (T342: prog 12).
11.10 Creating the Silver Thomas (D301: prog 06).
11.35 New trends in geography: Communes and changing patterns of settlement (D301: prog 13).
12.00 Computers and computing: Getting the best out of hardware (M361: prog 07).
12.25 School and society: Anatomy of change (D304: prog 06).
12.50 Technology foundation course: Transducers for servos (T100: prog 08).
13.15 Linear mathematics: Right transformations (M255: prog 07).
13.40 Mathematical methods for science and technology: Buckling (MST281: prog 11).

RADIO 4 (VHF)

Additional programmes for North Scotland and parts of Wales
9.20 People and organizations: Army II (T262: prog 06).
9.40 Open Forum.

RADIO 3 (VHF)

11.00 Systems modelling 1: Planning balance of payments (D342: prog 06).
11.25 Linear mathematics: Revision (M255: prog 08).
11.50 Arts foundation courses: The Princess and the Philosopher (A100): prog 30).
12.15 Mathematical foundation course: Relations (M100): prog 19).
12.40 Science foundation course: Energy and the universe (S100): prog 06).
13.05 Renaissance and reformation: Calvin and the Calvinists (A202): prog 23).
13.25 The curriculum: content, issues and innovation: The hostile environment (E323: prog 06).
13.50 Science foundation course: The Sirius magnetic field (S100: prog 06).
14.15 Technology foundation course: Motion (T100/TP171: prog 06).
14.40 Mathematical approach to computing: Sorting algorithms (M361: prog 06).
15.05 Systems behaviour: Sheep production (T342: prog 12).
15.30 Creating the Silver Thomas (D301: prog 06).
15.55 New trends in geography: Communes and changing patterns of settlement (D301: prog 13).
16.20 Computers and computing: Getting the best out of hardware (M361: prog 07).
16.45 School and society: Anatomy of change (D304: prog 06).
17.10 Technology foundation course: Transducers for servos (T100: prog 08).
17.35 Linear mathematics: Right transformations (M255: prog 07).
18.00 Mathematical methods for science and technology: Buckling (MST281: prog 11).

RADIO 4 (VHF)

Additional programmes for North Scotland and parts of Wales
18.20 Open Forum.

RADIO 3 (VHF)

18.40 Complex analysis: Analytic functions (M333: prog 06).
19.05 Science foundation course: Major features on the earth's surface (S100: prog 06).

RADIO 3 (VHF)

Additional programmes for North Scotland and parts of Wales
9.10 Mathematics foundation course: Revision (M100: prog 30).
9.35 (S,DVR) Mathematics foundation course: Review (M100: prog 31).

RADIO 3 (VHF)

11.40 The curriculum: content, issues and innovation: Planning and implementation (E323: prog 07).
12.05 Science foundation course: Major features on the earth's surface (S100: prog 06).
12.30 Mathematical foundation course: Revision (M100: prog 30).
12.55 Mathematical foundation course: Review (M100: prog 31).

RADIO 4 (VHF)

9.10 School and society: The realities of change (D362: prog 10).
9.30 Statistical sources: Poverty and large families (D321: prog 19).
9.50 New trends in geography: Cumbernauld (D301: prog 13).
10.10 Technology foundation course: Artificial intelligence (T100: prog 10).

Monday August 4

BBC 2

7.05 Instrumentation: Signals and noise (T09: prog 08).
7.30 Statistical sources: Crossing the River Thames (D321: prog 06).
8.40 Mathematics in context: Politics: Error correcting codes (M100: prog 08).
9.05 Statistics: an interdisciplinary approach: Linear regression (MDT241: prog 06).

RADIO 3 (VHF)

Additional programmes for North Scotland and parts of Wales
6.00 History of architecture and design 1890-1939: Oriental lacquer and French design in the 1920s (A305: prog 10).
6.20 International politics and foreign policy: Interstate or world society (D332: prog 10).
9.40 The digital computer: Computers and people (T262: prog 06).

RADIO 3 (VHF)

17.45 Problems of philosophy: Wittgenstein: The religious language (A305: prog 10).
18.05 Education, economy and politics: Policies, priorities and alternatives (E262: prog 07).
18.25 Microcomputers: Investment appraisal (D282: prog 14).
18.45 Physiology of cells and organisms: Pituitary function in parturition (S261: prog 06).
19.05 Mathematics foundation course: Linear programming (M100: prog 28).
19.28 Making sense of society: Nationalism and politics (D102: prog 34).

Tuesday August 5

BBC 2

7.05 Linear mathematics: Right transformations (M255: prog 07).
7.30 The development of instruments and engineering: Magnetic recording (S304: prog 10).
8.15 Technology foundation course: The heart of computers (T100: prog 09).
8.40 Complex analysis: Analytic functions (M333: prog 06).
9.05 Science foundation course: Major features on the earth's surface (S100: prog 06).

RADIO 3 (VHF)

Additional programmes for North Scotland and parts of Wales
9.10 Mathematics foundation course: Revision (M100: prog 30).
9.35 (S,DVR) The curriculum: content, issues and innovation: Planning and implementation (E323: prog 07).
10.05 History of architecture and design 1890-1939: Oriental lacquer and French design in the 1920s (A305: prog 10).
10.25 International politics and foreign policy: Interstate or world society? (D332: prog 10).
10.45 Physiology of cells and organisms: Pituitary function in parturition (S261: prog 06).
11.00 Microeconomics: Investment appraisal (D282: prog 14).
00.20 Statistical sources: Poverty and large families (D321: prog 19).
00.40 Problems of philosophy: Wittgenstein and religious language (A305: prog 10).

RADIO 3 (VHF)

6.20 Urban development: Social perception and housing (Chicago) (D101: prog 24).
6.40 Age of revolutions: Debussy, Berlioz and Paganini (A302: prog 07).
17.45 Tonics in pure mathematics: Fourier series (M202: prog 25).
18.05 Statistical sources: Poverty and large families (D321: prog 19).
18.25 Business management: Business and information systems (D205: prog 07).
18.45 Comparative government and politics: Italian Parties (D211: prog 05).
19.05 Technology foundation course: Artificial intelligence (T100: prog 10).
19.28 Introduction to social sciences: Arts foundation courses: Decision making in Britain: Overcoming problems with the exercise (A100: prog 36).
24.00 Arts foundation courses: Decision making in Britain: Overcoming problems with the exercise (A100: prog 36).
00.25 Mathematical foundation course: Revision (M100: prog 30).
00.45 Mathematical foundation course: Review (M100: prog 31).

Wednesday August 6

BBC 2

6.40 Biological bases of behaviour: Conditioning and learning (HT120: prog 11).
7.05 Environment: Properties of water (S2-2: prog 01).
7.30 (UC) Chemistry of rocks (S2-2: prog 01).
17.00 School and society: Anatomy of change (D304: prog 06).
17.25 The early Roman Empire and the rise of Christianity: The establishment in Britain (AS01: prog 06).
17.50 Urban education: Metro: curriculum issues (E352: prog 08).
18.15 Urban development: An overview (D205: prog 10).
18.40 Arts foundation course: Action (A100: prog 35).
19.05 Topics in pure mathematics: A rational approach to the square root of 2 (M202: prog 24).

RADIO 3 (VHF)

6.00 Open forum.
6.20 School and society: The realities of change (D362: prog 10).
6.40 New trends in geography: Cumbernauld (D301: prog 13).
17.25 Open Forum.
17.40 Chemical analysis: Uniform convergence (M332: prog 06).
18.05 Developmental psychology: Heritability and IQ scores (DB351: prog 06).
18.30 Economics and applied calculus: Solving economic problems (M254: prog 06).
19.05 Mathematics foundation course: Linear programming (M100: prog 28).
24.00 The digital computer: Computers and people (T262: prog 12).
00.20 Mathematics foundation course: Implementation: Signal statistics (M361: prog 08).
00.40 The early Roman Empire and the rise of Christianity: The Britons under Rome (AS01: prog 12).

Thursday August 7

BBC 2

6.40 Urban development: An overview (D205: prog 10).
7.05 International politics and foreign policy: Interstate or world society: Conflict in the Golan Heights (DX322: prog 06).
7.30 Introduction to psychology: Search for the author (DB361: prog 08).
17.00 New trends in geography: Communes and changing patterns of settlement (D301: prog 13).
17.25 Computers and computing: Getting the best out of hardware (M361: prog 07).
17.50 Technology foundation course: The heart of computers (T100: prog 09).
18.15 Linear mathematics: Revision (M255: prog 08).
18.40 Age of revolutions: Ingres (A302: prog 06).
19.00 Mathematical foundation course: Implementation: Signal statistics (M361: prog 08).

RADIO 3 (VHF)

Additional programmes for North Scotland and parts of Wales
24.00 Urban development: Social perception and housing (Chicago) (D101: prog 24).
00.25 Mathematical foundation course: Implementation: Signal statistics (M361: prog 08).
00.45 The early Roman Empire and the rise of Christianity: The Britons under Rome (AS01: prog 12).

Friday August 8

BBC 2

6.40 Complex analysis: Analytic functions (M333: prog 06).
7.05 Urban development: Social perception and housing (Chicago) (D101: prog 24).
7.30 Introduction to psychology: Search for the author (DB361: prog 08).
17.00 Visual perception: Colour (A251: prog 06).
17.25 Systems modelling 1: Planning balance of payments (D342: prog 06).
17.50 Mechanical engineering: Gears and gear trains (T262: prog 07).
18.15 Ecology: Alkaloids: A limestone valley (AS03: prog 09).
18.40 Forms and styles: Dance and drama (A201: prog 06).
19.05 Mathematical methods for science and technology: Buckling (MST281: prog 11).

RADIO 3 (VHF)

6.00 Science and society: The Commission on Human Medicine (AS02: prog 06).
6.20 Decision making in Britain: Overcoming problems with the exercise (D205: prog 06).
6.40 Decision making in Britain: Overcoming problems with the exercise (D205: prog 06).
18.05 Public policy: Planning and the environment (D342: prog 06).
18.25 Public policy: Planning and the environment (D342: prog 06).
18.45 Public policy: Planning and the environment (D342: prog 06).
19.05 Public policy: Planning and the environment (D342: prog 06).

RADIO 3 (VHF)

Additional programmes for North Scotland and parts of Wales
24.00 Urban development: Social perception and housing (Chicago) (D101: prog 24).
00.25 Urban development: The social context (D205: prog 09).
00.45 Urban development: Britain: The housing market (D205: prog 11).

BOOKS

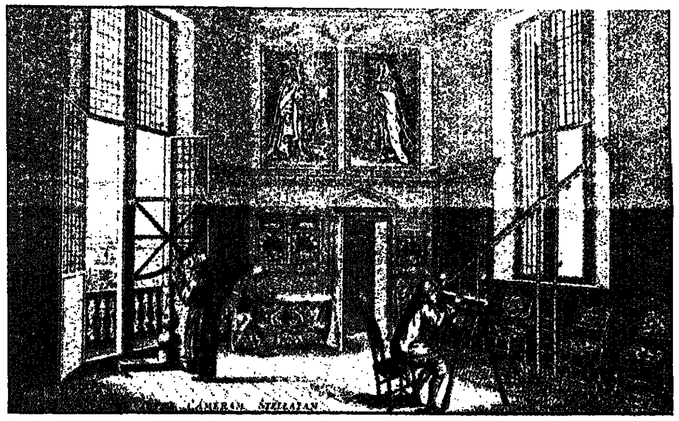
It gives astronomical data and tells the time

300 years of British Astronomy: Greenwich Observatory, 3 vols
by E. G. Forbes, J. A. Meadows and D. Howse
Taylor and Francis, £25 (the set)
ISBN 0 85066 093 9, 094 9 and 095 5

It is is easy to take for granted accurate time-keeping, precise navigation and well-designed maps and to be unaware of the great advances that have been made in observational astronomy especially during the eighteenth and nineteenth centuries. When the Royal Greenwich Observatory was founded in 1675 and the first Astronomer Royal, John Flamsteed, took up residence at Greenwich, the aims of the new observatory were very clearly specified—to find an astronomical method for the determination of longitude at sea.

During the fifteenth and sixteenth centuries all the major voyages of discovery—to India, to the Americas, and even circumnavigation of the world—were undertaken with very little concept of how to fix longitude. Navigation depended on reaching a landfall and then working out whether or not one's destination was north or south of it. In the early days of exploration it did not matter a great deal where one made a landfall but once land had been claimed it was necessary to find it again.

When trading began errors in navigation cost money and by the seventeenth century the problem of determining longitude was most important. Astronomy offered the method of lunar distances, but when the RGO was founded neither the lunar orbit nor the precise position of critical stars was known with an accuracy which allowed a successful application of this method. To such precise measurement Flamsteed addressed himself, making not only the necessary observations but also designing the necessary instruments. It is interesting to read of the failures of some of the early instruments (including comments on the inclemency of the weather) and to realize it was not all steady progress of ever-increasing accuracy. The work of Flamsteed and his successors, Halley and Bradley, laid a substantial foundation for modern work. They patiently evaluated the corrections to be applied for instrumental imperfection, for refraction in the earth's atmosphere, for aberration, for precession and nutation.



The Octagon Room c1676.

But just when the precision of star places and knowledge of the lunar orbit had reached a point where the method of lunar distances was becoming a practical proposition, a new development overtook it. Harrison developed a high precision marine chronometer. This caused certain unpleasantness when the Astronomer Royal of the day, Maskelyne, seemed unimpressed by the undoubted merit of Harrison's clocks. However, it was quickly realized that the accurate maintenance of Greenwich time by a chronometer gave a particularly simple means of establishing longitude and the use of lunar distances slowly declined. Maskelyne's own innovation was the foundation of *Nautical Almanac* in 1766, which has proved an invaluable guide to navigators, surveyors and astronomers since then.

The information and expertise that was accruing led on to other applications particularly in terrestrial surveying. Accurate mapping was demonstrating anomalies which needed to be understood and allowed for. Two assistants at Greenwich, Mason and Dixon surveyed the boundary between Maryland and Pennsylvania (Mason-Dixon line) and they determined the length of a degree of latitude during the course of their survey. That work was hoped to give an accurate value since they were operating in flat country, but the effect of the Allegheny Mountains to the west and the Atlantic Ocean to the east produced an error of about 100 feet in 69 miles. As a result Maskelyne decided to investigate the effects of mountain masses in an expedition to Schiehallion in the summer of 1774. While his results confirmed Newton's laws and confirmed that variation in terrestrial gravity would result in errors in the measurement of the length of the degree, they did not give sufficient accuracy for the determination of the earth's oblateness.

A change in the outlook of the RGO came with the appointment of Airy as Astronomer Royal. Airy made the Royal Observatory a professional establishment and set up the basis of the staffing arrangements now found there. He had a leaning towards astrophysics and he conducted experiments in geomagnetism and solar studies. Even spectroscopy was introduced, but it seems only to have become respectable when radial velocities could be applied in positional work. Airy was a remarkable scientist and perhaps the last Astronomer Royal who was consulted frequently as a science adviser outside his particular field of study. If astronomy led Airy directly into the Royal Commission on the Standard of Weight and Measure, he also was a proponent of decimal currency. His work on decimal currency led to the introduction of the florin and perhaps it is Airy who is the real father of the 10p piece.

The course of the RGO since Airy has been towards astrophysics. Both his successors Christie and Dyson encouraged expansion of the observatory activity without prejudice to its basic duties for precise measurement of time and position. But by the early 1930s it became clear that the Greenwich atmosphere was becoming too polluted from smoke and industrial effluent and a move of site was begun in 1948. By the time Woolley was appointed Astronomer Royal in 1956 it was clear that the observatory should be investigating a wider range of astronomical work and in 1965 the observatory was transferred to the Science Research Council (then the Department of Scientific and Industrial Research) having formed a part first of the Board of Ordnance and then the Admiralty. By now the observatory was purely a scientific establishment rather than an observatory whose function was limited and where the pure science had been practised by special dispensation from a well disposed "patron".

Even after 300 years the future of the observatory is under review. A new role is envisaged, as an establishment taking responsibility for the maintenance of observational facilities for the British Astronomical Community as well as carrying on with fundamental research and maintaining its role in the provision of basic astronomical data and a time service.

The three volume history of the observatory gives glimpses of the men who built the RGO into the institution it is today. It is easy to be critical of the approach of the first Astronomers Royal, but volume one on the early Astronomers Royal (Flamsteed to Pond) and volume two on the Astronomers Royal, from Airy to Woolley, give a perspective and feeling for the conservatism under which each man worked. The material in volume one on Maskelyne is of particular interest since he does not seem to have had a biographer even though he must be one of the key personalities in the history of the RGO.

Volume three is a history of the Greenwich instruments. It contains extensive illustration of the instruments and gives a valuable historical record, details of purchase, a description of the instrument, how it was used, contemporary accounts and its ultimate fate. There seems to have been a fortunate habit of hanging up old instruments at Greenwich with the result that many are now preserved there today. But it is a source of regret that the Flamsteed instruments have been so completely lost, and I wonder what the Queens University Belfast (then Queens College) did with the Jones's Mural Circle of 1821 which it acquired in 1851.

These three volumes are an invaluable record of the history of the RGO. Its scientific contribution has been enormous and has depended heavily on the calibre of the men who have led and directed it. Not all coupled scientific ability with administrative acumen but on the whole the observatory was fortunate in the quality of its leadership.

Derek McNally

Colonial and post-colonial Argentina

Argentina in the Twentieth Century
edited by David Rock
Duckworth, £6.95
ISBN 0 7156 0648 4

Politics, Economics and Society in Argentina in the Revolutionary Period
by Tulio Halperin-Donghi
translated by Richard Southern
Cambridge University Press, £14.50
ISBN 0 521 20493 3

Tulio Halperin's learned and elaborately detailed study of Argentina's break from Spain and her first years of independence is one of those rare works that immediately establishes itself as the indispensable and definitive account of the period. David Rock's edited collection of essays deals largely with the twentieth century. It is a stimulating compilation of original essays, two of which offer rather conflicting interpretations.

Studies of recent Argentine development, in English at least, are disappointing. The obscurities of that perplexingly complex country have produced a rather indifferent literature, so David Rock's collection is very welcome. Essays by A. G. Ford, Roger Gravil and Colin Lewis deal with aspects of Anglo-Argentine economic relations; three more, by the editor, Jorge Fodor and Walter Little (a treasurer, well-argued piece) examine aspects of Peronism in and out of power. David Rock contributes an article on Radicalism from 1912 to 1930, and Ian Rutledge explores the sociology of the sugar cane industry of Northern Argentina.

There is not one weak contribution, and although each deserves some comment, two essays in particular are outstanding. Jorge Fodor's scrutiny of Perón's economic policies in the period 1946-48 is a critique of the general interpretation of Argentina's post-war economic policy which usually attacks Perón for neglecting agriculture, encouraging autarky, and dissipating the large foreign exchange reserves that had been accumulating during the Second World War. Indeed, in the essay immediately preceding Fodor's in this book, Colin Lewis offers an account that shares those criticisms (though his contribution extends beyond that period and is an interesting interpretation of two decades of Anglo-Argentine economic relations). Lewis argues that Argentina chose the wrong path in fostering industrialization rather than agriculture, that the Government's attitude to foreign investment was misguided, and that the decision to nationalize the railways had adverse consequences. While not meeting all these criticisms directly, Fodor attempts to explain the economic rationality of such policies in the light of the expectations of the policy makers, faced with a war-devastated Europe and an increasingly protectionist USA. He shows that contemporary analysis of the economic outlook for Argentina was far from optimistic. Europe needed Argentina's food exports, but could not pay for it (except with very generous credits from Argentina itself). The USA could pay for Argentine exports, but was more concerned with protecting its own agriculture." European currencies were inconvertible, so not much use for Argentina's grave gold and dollar shortage. Moreover, argues Fodor, "sterling's collapse in 1947 destroyed the whole of Argentina's economic strategy . . . Argentina discovered that the important buyer of wheat was unable to pay". Fodor also defends the state selling agency, the Argentine Institute for the Promotion of Trade (IAPI) from the charge of exploiting the countryside. This contribution really is reinterpretation with a vengeance, and its juxtaposition with Lewis's essay provides an admirable contrast.

Any attempt to offer an overall interpretation of Peronism faces formidable difficulties, ranging from the personal inscrutabilities of Perón himself, through the lack of data on key issues, to the vexed question of the relationship between the economic and political cycle in post-war Argentina. David Rock's synthesis is bold and skilful, and gains unity precisely because the political structure of Peronism is closely linked to the performance of the Argentine economy. However, the essay also points to some considerable gaps in our understanding of the phenomenon of Peronism, especially of its class composition. Rock himself remarks in a footnote that "in purely empirical terms it has never been shown who exactly its elite supporters were". Yet the author can still describe both the Peronist movement, and the opposition *Unión Democrática* as "vertical class alliances" (which in a manner of speaking is no doubt true of the British Labour and Conservative parties). The relationship between Perón and the army, especially in the earlier period is also rather thinly sketched and it would have been useful to have had as detailed an interpretation of that relationship as Walter Little provides for Perón's dealings with the trade union movement. Nevertheless, Rock's contribution is *tour de force*, and the whole book is an extremely valuable addition to the study of twentieth century Argentina.

One immediate reaction on reading Tulio Halperin's book is gratitude for the transintor, Richard Southern. The author's style makes no concession to the reader as sentences of Proustian length and complexity make almost every paragraph an intellectual adventure demanding sustained concentration. Translating this very long book must have been an extremely demanding task, but it has been accomplished with great skill.

The aim of the book is stated simply enough; it is "to trace the vicissitudes of a political elite created, destroyed and then created again by war and revolution". Underpinning the whole account is a sure grasp of the colonial and post colonial social order in all its regional variations. The collapse of the colonial order, the new role of the revolutionary militia, the economic dislocation and reorientation, the role of the church and the bureaucracy are just a few of the themes woven into this fabric of this study of Argentine society in the revolutionary period. A full understanding can probably only be achieved by several readings, so densely packed is the book with ideas and information.

Alan Angell

Numerical

Number Theory
by T. H. Jackson
Routledge & Kegan Paul, £1.50
ISBN 0 7100 7998 2

Number Theory is the latest title in Routledge and Kegan Paul's Library of Mathematics series, edited by Walter Lederman. Some of these useful little books must have found their way on to the bookshelves of most first and second-year mathematics undergraduates for some years past, and very good value for money they were once. At £1.50 for a slim paperback of 88 pages this volume seems less of a bargain, which is a pity because the topics covered ought to be part of the education of every student of mathematics.

The study of the classical theory of numbers requires little mathematical background from the beginner, and Dr Jackson's book assumes hardly any more of the reader than a familiarity with the elementary operations of arithmetic. Having dealt with prime factorization, multiplicative functions and Möbius inversion, the author proceeds to develop the idea of congruence, both linear and non-linear, culminating in a proof of Gauss's law of quadratic reciprocity. The final section is on sums of squares. This is a book that students can read by themselves: it is well-written, well organized, and contains plenty of worked examples and exercises with solutions.

John R. Silvester

BOOKS

Elegant fencing

The Professional Fence
by Carl B. Klockars
Tavistock, £5.00 and £2.90
ISBN 422 74950 8 and 74940 0

The Double Market: Art Theft and Art Thieves
by Keith Middlemas
Gordon Cremonesi, £5.50
ISBN 0 347 00042 8

Sociology often throws up some rather lightweight contribution which becomes quoted so often (for example, in footnotes and exam questions) that it quickly "enters into the literature". One such example was Ned Polsky's somewhat unremarkable argument that criminology would benefit by some first-hand knowledge about *successful* criminals, observed not in prison but in their natural settings. Seven years later we can still only refer students to the same meagre research which Polsky knew—classics such as Sutherland's *The Professional Thief* published in 1937—and supplement this with material of *The Godfather* genre. There are some good sociological studies of organized crime, but we still have few sociologically relevant stories of what a criminal life is about.

Polsky, of course, glossed over some of the problems of doing such research but at last a criminologist has had the enterprise to tackle them rather than use them as a prescription for yet a further retreat into abstract theorizing. Carl Klockars's study of the life and ideology of "Vincent Swaggi", professional fence for thirty years and still working, must surely become a criminological classic. It works at all sorts of levels: a plausible account of a moral career; a rich case study of deviant motivation and an extraordinarily detailed ethnography of the symbiotic relationships and institutions which maintain the subterranean economy of fencing. Above all it vindicates what Durkheim tried to do in *Suicide*, and what subsequent generations of deviancy theorists in the same tradition have lost sight of, to show what deviance reveals about the ordinary workings of society.

Klockars is fascinated by the two themes I will call "elegance" and "normality". The first theme is raised in his introductory discussion about that most famous fence of all time, Jonathan Wild, who "solved the problems of becoming a professional fence correctly and efficiently, elegantly in the way mathematicians use the term". Certainly this is true of Vincent. At all stages of his career—from early hustling on the streets to the running of a massive business operation, and in all the demands placed on him—interactional skills in coping with thieves, customers and the police, histrionic ability in the courtroom, business acumen not out of place in a Harvard Business School casebook—there is no doubt about his style. Study, for example, his complex technique for hiding the fact that the property he sells in his legitimate business front is stolen.

The normality theme attempts to show that making a living for thirty years as a receiver of stolen property is just like any other job. We are told of Vincent's deep reverence since childhood for the protestant ethic; his strict work habits (up at 5.30 am seven days a week); his role as steady provider for his family; his kindness and charity to good causes. Klockars tries perhaps too hard here. Are the detailed descriptions of Vincent's mundane eating habits there to show us that criminals do not, after all, eat caviare or shoot up heroin for breakfast?

The real problem with both the elegance and normality themes is this: when taken to extremes, they tend to ignore the deviant qualities of the enterprise. This is precisely the point of Matza's critique of the dangers of romanticism and sentimentality in the appreciative view of deviance. However normal, elegant and indeed attractive the enterprise is, it remains vulnerable to those forces of control it has so cleverly evaded. It is all very well to talk of Jonathan Wild's style—but he went to his execution, after all, with dirt and stones being thrown at him by the crowd who "reviled and cursed him to the last".

Klockars is sensible enough to avoid too much sentimentality and of course the point of his analysis is to show that the deep social and economic needs which Vincent fulfils, will guarantee him immunity from anything like Wild's fate. Indeed, Vincent is portrayed as a lovable and harassed Robin Hood figure, maniacally shifting transistors, fur coats, and panty hose from one hungry sector of the commodity market to the other.

More interesting is how he has explained these thirty years to himself. Here Klockars adopts a conceptual framework derived from "vocabulary of motives" theory. Vincent's *apologia pro vita sua* is a collection of motivational accounts which serve to neutralize the seriousness of his criminality to himself and others. I agree with Klockars that this collection is "authentic" in the sense that the working philosophy is one that Vincent actually uses. It is more developed than in many other types of deviance because Vincent's identity is public and acknowledged: almost everyone he is in contact with knows that he is a fence. His stock of publicly available accounts draw on the cultural ambivalence about property crime in general and buying stolen property in particular. "I don't do nothing wrong", Vincent can say: he never stole anything in his life, there is a difference between stealing and receiving, receiving would take place without him, he is not responsible for hurting anybody. And he can also say "Sure I've done some bad things in my life, who hasn't? Everybody's got a skeleton in his closet somewhere. But you gotta take into account all the good things I done too." This is the powerful "metaphor of the ledger": the existence of credit and debit columns allow his to come out with a favourable accounting of his life. It also leaves him with a faith in the moral order not very different from most people's—and simultaneously allows him to loosen the restraint of that very order.

A different sort of irony runs through the strange world of art collecting and art theft, where of course the fence also plays a central role, although he might appear under a more euphemistic title like "dealer". Middlemas's "double market" refers to the way in which, parallel to the normal trade in antiques and works of art, there is a massive organization for stealing, disguising and restoring to "legitimate" sale whatever the straight market requires. Middlemas gives us nothing like the real research and his book is the usual mixture of anecdotes, personal opinions and random facts, that one finds in this sort of amateur criminology. Interest is sustained by the nature of the property: it is revealing to compare the traffic in jade, ivory, canvases and statues to that passing through Vincent's hands. The prosecutor in a case where a famous Klee was stolen, took pains to establish that "a painting is not a loaf of bread or a can of beans or a Cadillac convertible or a share of General Motors' stock". But property it is and as long as we have property we will have theft. Middlemas seems to suggest that art theft will only end when the last major treasure is safely locked in the vaults of the last museum. He also quotes Proudhon —"property is theft"—and finds it ironical that the paintings of Proudhon's friend Courbet (who agreed with him) duly became property and were stolen.

I have a feeling that only someone like Vincent Swaggi would really appreciate the irony.

Stan Cohen

Child health progress

Early Child Care in Britain
by Mia Kellmer Pringle and Sandhya Naidoo
Gordon and Breach, £4.10
ISBN 0 677 05200 6

Early Child Care in Britain is one of a comparative series of monographs about care given to young children in countries as diverse as Britain, the United States, the Soviet Union, India and Israel. Despite the importance attached to early child care there has been little international literature which can be made easily accessible to interested teachers, nurses, social workers or parents themselves.

In order to encourage the exchange of information and ideas about services for young children the International Study Group for Early Child Care was established in 1969. It is comprised of specialists in education, medicine, developmental and social psychology, sociology and social welfare, coming from very diverse urban industrial nations. This series of monographs represents the group's contribution to an international exchange of views, each one concentrating upon a particular country's arrangements for a partnership between family and state to further the welfare of the pre-school child.

The two authors of the British monograph are members of the National Children's Bureau, formed in 1963: Dr Mia Kellmer Pringle, the director, a psychologist with a distinguished record of research into the background of deprived children, and Mrs Sandhya Naidoo, also a psychologist, a member of the bureau's staff with responsibility for research into early child development. With this background we would expect a careful evaluation of the services provided in the light of the young child's needs, and this is what we get, together with an account of much research on which the evaluation of the present services can be based, and some indication of the immense task which is yet to be undertaken, if this hitherto largely neglected age-group is to be given the consideration it requires.

The study contrasts the present policy for pre-school care and education of the child with the policy implications for child health at the beginning of this century, since when a revolution in children's health and growth has been achieved. General knowledge about child health is disseminated in the population, in marked contrast to the nineteenth century, when economic conditions played their part in child disease and parental ignorance compounded it. Now a similar understanding needs to be promoted of how emotional, social and intellectual development in children can be fostered.

Jean Heywood

Gauging policy effects

The Medium Term: Models of the British Economy
edited by G. D. N. Worswick and F. T. Blackaby
Heinemann Educational, £4.80
ISBN 0 435 84960 3

The medium term of the title is the British economy two to five years hence. More specifically, this book reports on a Social Science Research Council sponsored conference, held in London in April 1973, the purpose of which was to provide an opportunity for academics and economists from government and industry to discuss problems of projecting economic activity beyond the customary eighteen-month horizon scanned by the Chancellor before each budget. Unlike short-term forecasting exercises, in which government policy is usually assumed to remain unchanged during the period ahead, the emphasis in medium-term analysis is on simulating the response of the economy to alternative measures, so that policymakers are given some idea, in quantitative terms, of the real options for, say, stimulating growth while simultaneously conserving the balance of payments.

Three macroeconomic models are presented in part one. The Treasury's medium-term model is closely related to its more familiar procedure for short-term econometric forecasting concerning the budget. In brief, demand, measured at constant prices, is separated into its major components which are then projected either exogenously, for example using White Paper data on planned government spending, or by means of formal statistical relationships. These projections include the estimated effects of what-if policies are under consideration. Future values are likewise obtained for the balance of payments, domestic prices and the terms of trade. The supply of output is determined by an estimate of employment coupled with extrapolations of productivity trends. Because the model's main function is to explore the implications of policy rather than to generate genuine forecasts, private consumption is treated as a residual, the difference between the other demand components and total supply.

Markedly different approaches to this sort of analysis are offered by two Cambridge models. Whereas the Treasury's concern is the actual path the economy might take in response to policy stimuli, the Cambridge economic policy group's model is designed to explore the economy, that is an economy's trend, subject to the maintenance of a satisfactory balance of payments and constrained by the availability of resources defined as full-employment gross domestic product. If past trends are assumed to continue, the par projected series can be interpreted normatively as target values for viable medium-term policy. But deriving par values and relationships from actual data seems to be at least as much a matter of art as of science; the authors themselves warn that their method is beyond the pale of conventional econometric analysis.

The third macroeconomic model emanates from the Cambridge economic growth project. Again its primary purpose is to test the feasibility of alternative policy objectives. However, in contrast to the other models its treatment of productivity, generated by investment, is endogenous. And the method, involving a disaggregated input-output analysis of 35 industries, is more akin to the micro-economic models of the United Kingdom—textile industry and energy sector, which form part three.

The case for disaggregation is persuasively argued by V. E. Woodward in his contribution to the discussion on the models in part three, which also includes an excellent general appraisal, by A. F. Budd of the Treasury, of the scope for medium-term analysis in general economic strategy. Treasury and par models drew participants' criticism for their crude supply conditions, and all three groups were criticized for their estimation methods. Surprisingly little was said on the unanimous omission of any link between the public sector borrowing requirement and the rate of inflation, and of any serious attempt to integrate the economy's real and monetary sectors. However, work on the models continues; one knows, for example, that the current Treasury version is larger, fully integrated with its short-term forecasting procedure and includes a detailed flow of funds analysis, and explicit treatment of monetary variables so the worst that can be said of this otherwise useful collection of conference papers is that by now some of them are rather out of date.

J. C. Kay

Lands of surplus labour

Economic Theory and the Developing Countries
by A. K. Dasgupta
Macmillan, £5.00 and £2.50
ISBN 333 11295 4 and 11299 7

Dr Dasgupta states as the basis of his introductory undergraduate text his own belief that contemporary low-income countries possess sufficient common characteristics to be usefully treated within the framework of a unified analytical approach, the theme of which is planned intervention in promoting domestic industry.

Questioning the explanatory value of many of the factors which are invoked in the literature to account for differential growth rates between countries over time—attitudes towards work, enterprise and thrift, climate and other resource endowments, including available technology—Dr Dasgupta argues instead that, historically-speaking, western European economic growth was based on the widespread use of state power to promote new industrial technologies, and to secure domestic and overseas markets for emerging industrial enterprises. Correspondingly the character of colonial rule was such as to discourage the growth of competitive indigenous industry in those countries which comprise today's underdeveloped world, and significantly, to preclude the emergence of a strong, indigenous entrepreneurial class committed to industrialization.

Thus the major part of his book is devoted to planning issues current in the development literature. There is a critical appreciation of the theory of optimum investment, which also covers the sectoral allocation of investment and the choice of techniques. Further chapters provide introductory accounts of cost-benefit analysis, input-output, linear programming and manpower planning, as related to their uses in the planning process in a developing country. The exposition is particularly lucid with minimal use of mathematics, and should provide a welcome point of entry into the planning literature for the undergraduate.

What is arguable, taking this text as a general introduction to the subject, is whether the student is made sufficiently aware of the significance of some of the assumptions underlying Dr Dasgupta's approach. These assumptions relate in particular to the role of savings and capital accumulation in the development process. (there is an especially useful discussion of sectoral savings ratios in chapter four), and the existence of surplus labour of the Lewis type.

For instance, in chapter two which is devoted to dualism and surplus labour in the developing economy, the concept of underemployment of labour is explicitly restricted to countries such as India and China, with unfavourable man-land ratios. Yet the existence of surplus labour so defined, is fundamental to much of what follows in the planning chapters which claim a general relevance. Significantly perhaps, the analytically interesting phenomenon of high "leisure preference" in some sparsely populated countries of the Third World, does not feature in the discussion.

For similar reasons, the emphasis placed by the author on development as its international setting, which occupies a short concluding chapter, will be too slight for many readers, and its pull is very much towards the India case in the attention paid to stagnating exports, foreign exchange bottlenecks, and import substitution for potentially large domestic markets.

There is an excellent two-page bibliography to the book comprising chapter references, and annotated further reading.

Barbara Ingham

BOOKS

Aura, atmosphere and spirit

A Preface to Yeats
by Edward Malins
Longman, £3.00 and £2.00
ISBN 0 582 35105 7 and 35106 5

A Reader's Guide to George Orwell
by Jeffrey Meyers
Thames and Hudson, £3.50 and £1.95
ISBN 0 500 14019 7 and 15014 1

Austin Clarke, His Life and Works
by Susan Halpern
Dolmen Press distributed by Oxford University Press, £4.25
ISBN 85105 265 7

Louis MacNeice: Sceptical Vision
by Terence Brown
Gill and Macmillan, £4.95
ISBN 7171 0698 5

Time Was Away: The World of Louis MacNeice
edited by Terence Brown and Alec Reid
Dolmen Press distributed by Oxford University Press, £4.25
ISBN 0 85105 237 1

W. H. Auden: A Tribute
edited by Stephen Spender
Weidenfeld & Nicolson, £4.50
ISBN 0 297 76884 0

There is no reason to despise handbooks, manuals, prefaces, or keys, if they mind their business and do what they have undertaken to do. They have not promised to be difficult, demanding, exploratory, far-reaching or original. Sometimes their main use is to remove obstacles, provide the necessary facts so that the reader, given a first push, may go forward under his own steam. There are writers who carry a lot of factual baggage. Yeats, for instance, burdens himself with a great deal of lore, circumstances, facts; more than, say, Orwell. Edward Malins's book offers to give the necessary facts, and it gives many of them, but there are too many errors to make his offer reliable. Eamon DeValera is deemed to have died in 1973: happily, he is still with us. Robert Gregory is once called Maud Gonne's "adopted daughter", "Tullylish becomes Tullynish, several Irish pronunciations are wrong, in "Thoor Ballylee" the first word does not mean a milking enclosure, Yeats's poem "Easter 1916" does not say that Major John MacBride had "done Years" most bitter wrong", the wrong was done to "some who are near my heart". A book of facts ought to be pedantically accurate; this one is not. Malins assembles lore in the form of a genealogical tree, a potted history of Ireland, a syllabus of Yeats's reading, a gloss upon a handful of poems, lists of people, places and symbols.

These things are available in other books, of course, but they are scattered. A student needs a good Yeats Dictionary on the lines of S. Foster Damon's *A Blake Dictionary*. Malins's preface does not serve that purpose, but it will be useful to students who simply want to know who Padraic Pearse was or what Yeats was doing in the Order of the Golden Dawn.

Readers of George Orwell are not obliged to ask such questions, they are more likely to ask about the relation between the several books and their bearing upon Orwell's life. Meyers is helpful on these topics, and says much of poverty and sacrifice in Orwell's early years. He considers Orwell, "after D. H. Lawrence, the most influential writer of the century", a judgment unsustained by evidence, and again he claims that Orwell is "more widely read than perhaps any other serious writer of the twentieth century". But generally he is sensible about Orwell. A student would still like some help on the difference between Orwell's official attitudes and the evidence provided by the structure and style of the fiction. There are at least two Orwells, allen brothers. Meyers is mainly concerned with the brother who emerges directly from early experiences of hardships, the other one is rarely present. But the helping hand he offers the reader is sound.

Miss Halpern acts upon the same assumption in regard to Austin Clarke, that there is a direct and fairly straightforward relation between circumstance and work, the life and the imagination. Clarke's poems, plays and essays are presented in a context of modern Ireland, the social history forced to conform to Clarke's version of it. Miss Halpern is naive in taking Clarke's word for the situation "in so far as there is any public in Ireland for Irish literature today it is largely a public with ingrained taste only for the romantic and 'Celtic'—and the shamrock and the leprechaun." Clarke must have told her that, and she must have copied it down, or plugged in her tape-recorder to receive it: it is nonsense anyway. Miss Halpern's book is most useful when it gives up dancing attendance upon Clarke's prejudices and concentrates upon the poetry.

Brown's study of Louis MacNeice is based upon his sense of the poet as a sceptic, and he pursues this assumption in its bearing upon themes of quest and alienation. He makes too much of MacNeice as an exile from Ireland, and is wiser upon the poet's language than upon its presumed psychological sources.

There is a gallantry of style in MacNeice's best work, and even if it sometimes lapses into ostentation, it issues from powerful motives. Brown is alert to these forces, and judicious in speaking of them. His book is lively and informative, but I wish he trusted the art of criticism enough to release it, when its liberty is precisely what it needs. Quoting a few lines from MacNeice's poem "Mayfly", he says that "comment on this would be clumsily destructive". No, it would not, unless the critic is clumsily destructive; the fault is not in our art but in ourselves. Brown admires MacNeice's poetry, as well he might, and since it is better to have one mind concentrated upon a subject than 20 minds glancing at it, his book is more valuable than *Time Was Away*, the sum of 20 short pieces, mostly reminiscences and gossip. The best essay is Derek Mahon's, mainly because he is content to have MacNeice a minor poet, excellent in his kind. There is no merit in claiming major status for MacNeice: when the bough breaks, the cradle will fall. Readers who need guidance through the poetry want solid help rather than self-regarding essays on the joy of drinking with MacNeice at the George after some BBC broadcast.

With Auden, the case is different. Everybody knows that the poems are good, and there are several excellent books, such as John Fuller's *Reader's Guide*, to prove it. MacNeice is not in that sense a received poet, so the reader still needs a lot of help. What the same reader is likely to appreciate, when Auden is in question, is an evening with the photograph-album. This is precisely what Stephen Spender's book provides, an evening with Cecil Beaton's photographs, and reminiscences from nearly everybody. Since this is not meant to be a book of facts, the inaccuracies hardly matter; nor do the repetitions, talk of Auden's cigarettes, carpet-slippers, time-keeping. It is enough if a book of this disposition drenches the reader in the rain of Auden's company: and it does. It is informative, too, especially in the little chapters by Cyril Connolly, Anne Fremantle, Ursula Niebuhr and Robert Craft, but information is not the point, the true point is aura, atmosphere, spirit. Readers who do not know who Yunnis is, or Alan, both being invoked with studied nonchalance in Chester Kallman's poem "The Dome of the Rock", may feel chagrined or banished to the back of the bus, but there is enough for everyone. Spender has assembled Auden's friends to make a party, an occasion, a tribute. It seems to me a genial thing to do.

Denis Donoghue



A detail from the painting "Parnassus" by Andrea Mantegna—Pegasus is wearing not only jewelry but also make-up. The illustration comes from "Renaissance Theatre Costume, and the sense of the Historic Past" by Stella Mary Newton. Deutsch, £8.95.

Poet of satire and folklore

Critical Essays on Robert Burns
edited by Donald A. Low
Routledge & Kegan Paul, £4.25
ISBN 0 7100 8109 X

This addition to "The Scottish Series" achieves less than its predecessors — perhaps inevitably, for criticism, in attempting more than assuredly useful texts and incisive monographs, must also risk more. A particular merit in Burns criticism now: the early modern polemic of MacDiarmid and Speirs, refined, amplified and popularized by Craig, Crawford and Daiches down to the early 60s, replaced the traditional romantic Burns with a politically conscious satirist and a folklorist steeped in Scottish language, community and tradition. English critics and readers have left him thus pigeonholed. The comprehensiveness, good sense and eclecticism of the studies by Crawford and Daiches have satisfied rather than provoked curiosity.

Critical Essays opens with a "self-portrait", a rather stale device here drawn from the arbitrarily limited palette of letters and notebooks alone. We do not learn whether or how Burns differed from his self-presentation; the rich undirected miscellany of events and attitudes seems too innocent about the literary problems of stance, persona and rhetoric (not to speak of the analogous psychological ones) which arise as much in Burns's prose as in his poetry. The account of audience-relation is likewise uncritical—the author moves from Burns's "independence" in his "acute sociability" without a tremor, citing Burnsic and Virgilian echoes in Satan's speeches in Hell, and concluding (not unexpectedly) that *Paradise Lost* goes on to reject epic heroism.

A terminology of "dynamic structure", "dynamic metaphor" or "dynamic progression" frames the critical exercise of rehearsing once more, and with dogged pedagogy, the paradoxes of the Christian epic, felling finally to illumine in any precise or significant way the *structure of Paradise Lost*: what we have instead is an extended note on an aspect of Milton's strategy.

Crawford's excerpt on the Epistles, though inevitably, as a fragment, losing some force. Scott on "The Satires: Underground Poetry" emphasises (to devious effect actually or potentially) gaps and distinguishes the anti-clerical satires attacking popular bigotry, from the social ones attacking injustice from a "popular" position.

On the songs Kinsley sketches in eighteenth-century "primitivist" attitudes to folksong and melody and discusses the early Scottish collections, and Daiches assembles a useful account of Burns's attitude to Jacobitism and a body of notes on particular songs. Davie emphasizes the songs as a harmony of words and music and finds the chief musical editor Dick far exaggerating Burns's musical expertise and the recent literary editor Kinsley far putting textual fidelity before "realistic technical editing" of the airs.

Low's introduction declares Burns to be down-to-earth, joyous, dynamic, learned, sceptical, egalitarian and erotic, to stand for life not for abstractions, to cover subtlety with apparent naivety; he wished to have essays on Burns and society, Burns and Romanticism, on the debt to Sterne, on the bawdy, the politics, the Scots-and-English and the songs. His contributors deliver only the last two of these, and only Davie's opening "The real nature of Burns's songs remains widely misunderstood" has the ring of a work seriously out to change opinion. Bentman's work on Burns and Romanticism should have been here, in some form, and Craig or Weston could have offered a more subtle account of the audience-relation. The current indulgent estimate of *The Merry Muses* is due for revaluation, and a non-polemical treatment of the Burns cult by a social historian or sociologist of literature is overdue.

Soundly conceived as a volume, rewarding in local points or paragraphs, *Critical Essays* seems in the end victorious but dull because too many of the essays substitute commentary and illustration for argument. The collection is a little too tame for the learned, a little too oblique for the common reader; the better things in it certainly deserve to be known.

Poetic licence with politics

The Politics of Milton's Prose Style
by Keith W. Stavely
Yale University Press, £4.25
ISBN 0 300 01804 5.

Structure in Milton's Poetry
by Ralph Waterbury Condee
Pennsylvania State University Press, £5.25
ISBN 0 271 01133 5

It is not new to suggest that Milton was in many ways a political innocent, propounding eccentric irrelevance or whimsical idealism to a world fit to read his poetry; but it is not often that the precise nature of that responsive—from what Stavely calls the "millenial melodrama" of early reforming zeal to the serenely rational "disembodied mind" of the final tracts—has been investigated with such wealth of example and subtlety of argument. The general account here of Milton's political writing in the prose tracts of 1641-1659 may be summarized in an aphorism which, in various forms, is central to the book: "Form embodies abstract ideal to the detriment of concrete political meaning."

This enduring paradox of political rhetoric is worked out from the beginning in a vigorous tutorial which seems to set a norm of ironic discrimination and cross-comparison with models which Milton's poetic structure in general imitates. "Lycidas", "Epitaphium Damonis" and the two epics fit the diagnosis of poetic structures which manipulate traditional forms to achieve their own spiritual resolutions: static, celebratory poems ("Elegia Quinta" or the "Nativity Ode") celebratory masque (*Comus*), or imitative Greek tragedy (*Samson*), do not accommodate themselves quite so well.

Where it should be strongest the book is weakest. It begins with an essay on *Paradise Lost*, as the supreme example of the structure Condee is talking about. What is offered is a familiar discussion of "Satan as hero", moving ponderously into a catalogue of Homeric and Virgilian echoes in Satan's speeches in Hell, and concluding (not unexpectedly) that *Paradise Lost* goes on to reject epic heroism.

A terminology of "dynamic structure", "dynamic metaphor" or "dynamic progression" frames the critical exercise of rehearsing once more, and with dogged pedagogy, the paradoxes of the Christian epic, felling finally to illumine in any precise or significant way the *structure of Paradise Lost*: what we have instead is an extended note on an aspect of Milton's strategy.

BOOKS

Propagation of waves

Ordinary Differential Equations—Theory and Practice
by John Heading
Elek, £6.95 and £3.50
ISBN 0 236 17722 2 and 17723 0

Too often elementary textbooks on differential equations place undue emphasis on methods of obtaining explicit solutions of various simple types of equation. The danger is that the student may gain the initial impression that differential equations are always to be solved explicitly and that a general mathematical theory is not a matter of practical interest. Therefore it is good to see here an introduction to the theory of differential equations in which the various aspects of the theory are firmly related to practical situations. The book is described in its sub-title as an elementary, integrated, applied treatment based on the wave equation, and it is worth emphasizing in view of the remarks just made that it is the treatment which is integrated rather than the differential equations themselves. On the cover the publishers claim that a good sixth-former could grasp much of the text between leaving school and entering a university.

This is extravagant for although the book is written well, it does require some maturity of thought on the part of the reader. The author writes not only for undergraduates but also for research students and professional mathematicians, scientists and engineers. At several points he takes the opportunity to correct errors which have crept into the literature.

The wave equation is in evidence throughout and the author describes many physical problems concerning the propagation of waves in diverse types of media. The mathematical theory is introduced in the context of the physical problems and the theory is, therefore, that of the linear second-order equation. Topics which are introduced and applied include the variation of constants formulae, matching of solutions for discontinuous coefficients, equations with a small parameter, asymptotic solutions with WKBJ (Wentzel, Kramers, Brillouin, Jeffreys) theory and Stokes theory, eigenvalue problems, and some variational theory. Of these topics, those on asymptotic solutions and eigenvalue problems receive the most systematic mathematical development and make up the two longest chapters in the book. Wave propagation in crystals and the associated Floquet theory of periodic differential equations is not covered.

The book does not profess to deal with a wider range of ideas and techniques which mathematics undergraduates and lecturers may expect to see in an honours degree syllabus on the theory of differential equations. It will therefore find a use among such readers alongside the standard texts as a much richer source of applications of certain parts of the theory than is normally found in a single book. At the same time, scientists and engineers will read that certain apparently reasonable approximating procedures are not justified mathematically and, for these readers, the author points to the necessity of a proper mathematical basis to the subject.

The author's idea of relating theory and practice in a really positive way is a useful one and one which, within the limits he has set himself, he has realized. In view of the current interest in the non-linear differential equations of fluid mechanics and biology, it is an idea which could well be extended. A book on non-linear equations with the same aim as the present book, although it would inevitably be more advanced mathematically, would be valuable.

M. S. P. Eastham

Field equations

Introductory Eigenphysics
by Clive Croxton
Wiley, £6.95 and £3.95
ISBN 0 471 18929 4 and 18930 8

This textbook for the advanced undergraduate presents a field theory approach to problems in physics. It uses mathematics as a tool of physics and to some considerable degree bridges the conventional divisions between classical and quantum mechanics, between physical optics and electron scattering and between electrostatics and aerodynamics. This is all the more reason why the reader should not allow himself to be deterred by the slightly abrasive title.

Emphasis throughout is on the physical basis of the problems discussed, with the mathematical background relegated to an appendix. Where possible the unifying basis of differential equations is exploited and supplementary problems are given at the end of each chapter. The five chapters cover the field equations, their rectangular, cylindrical and spherical solutions and finally approximate methods and applications.

The physics student will wish to buy the book, while the mathematician will probably wish merely to consult it. The latter will indeed find the physical applications of considerable value but will hardly be satisfied with the *ad hoc* approach to the standard differential equations and the special functions. This connexion classification of singular points and the hypergeometric functions would have given a much more unifying feel of the mathematics, and would have avoided the rather unconvincing derivation of the eigenfunctions of the associated Legendre equation. The discussion of the Jeffreys, Wentzel, Kramers, Brillouin (JWKB) approximation must be somewhat bewildering for students. I feel it would be better to stop at quoting Jeffreys's connexion formula, or alternatively, to derive it in an appendix using either of the two well-known methods.

A prerequisite for this book is a fairly stiff dose of vector algebra and analysis and the student would be advised to know well in advance the precise implication of the terms: potential, field, potential field and field potential.

The appendices cover Fourier and Laplace transforms, Bessel and Mathieu functions and Laguerre, Legendre and Hermite polynomials. Approximate methods include the usual perturbation and variational methods. Applications include the hydrogen atom, elastic scattering, atomic lattice vibrations, Fraunhofer diffraction, rotating planets and gaseous stars, earth tremors and liquid metals.

Misprints inevitably occur in new books and this one is no exception. A non-trivial error occurs on page 166 where the expression for the probability for finding a particle in a volume $d\tau$ incorrectly omits the factor r^2. A corrigendum would be extremely helpful for the student as would a list of correct answers to the problems for the lectures. The bibliography is extensive but is weighted somewhat in the direction of the MSc student.

Derrick Crothers

Reviewers

Alan Angell is university lecturer in Latin American politics at Cambridge and has written "Politics and the Labour Movement in Chile"; R. D. Bedford lectures in English at the University of Exeter;

Stan Cohen has written several books and papers on criminology and the sociology of deviance; he is professor of sociology at the University of Essex;

Barbara Ingham lectures in economics at the University of Salford; she will shortly publish "Trade, Growth and Development—an exploratory study of three low-income countries";

Derek McNally is senior lecturer in the department of physics and astronomy at University College London; he is assistant director of the Universities Space Research Association.

Uniformity

Philosophy of Geohistory: 1785-1970 (Benchmark Papers in Geology, volume 13)
edited by Claude C. Albritton, Jr
Wiley, £13.00
ISBN 0 471 02052 4

The "Benchmark Papers in Geology" are a very mixed series, but this one is in a class of its own: an important group of philosophical papers in geology. Albritton provides a slim commentary by way of introduction, and it is a pity that he did not feel able to add to his own publications on the topic, none of which are included here. Nevertheless, contributions from Hutton, Playfair, Lyell, Chamberlin and Davis speak well for themselves.

The whole collection hangs together around the concept of uniformity. First put forward in Hutton's "Theory of the Earth" (this abstract of 1785 is reproduced), the concept finds application in the complications of historical geology, whether viewed from the point of view of erosional processes (Mackin), evolution (Simpson) or time (Toulmin and Kitts).

C. F. A. Pantin has called geology an unrestricted science, noting that in such cases the construction and testing of hypotheses is particularly difficult. Nevertheless, the subject remains strongly dependent on the method of multiple working hypotheses, and Chamberlin's classic article (reprinted from the 1965 republication) is supported by intriguing embellishments by G. K. Gilbert and W. M. Davis.

It is to be hoped that access to this book will encourage more historical geologists to think about the way their knowledge has been built up, that it will give them a deeper understanding of the subject than what often seems little more than a faith that, after all, it is a science and the conclusions reached by geologists are thus "scientific". Consideration of the way in which Lyell was led through his remarkable perception of the field evidence to appreciate the hitherto inconceivable duration of geological time is a useful reminder of the nature and interpretation of geological evidence. Many geologists and physical geographers will have felt they could not afford previous volumes in this series: they will surely afford this one.

Keith Clayton

Problems

Stochastic Processes
by R. Coleman
Allen & Unwin, £4.50 and £1.95
ISBN 0 04 519016 X and 519017 8

Groups
by D. Wallace
Allen & Unwin, £3.75 and £1.50
ISBN 0 04 519012 7 and 519013 5

Fluid Mechanics
by J. Williams
Allen & Unwin, £3.75 and £1.50
ISBN 0 04 519014 3 and 519015 1

Problem solvers continue to demonstrate how many branches of university mathematics can be taught, at least up to a point, by a problem-based approach. Wallace breaks new ground for the series in applying the technique to pure mathematics. The subject matter is the usual mix of discrete (and frequently finite) groups, with some geometrical applications and finishing with Sylow subgroups. To a certain extent his later "problems" are theorems, renamed. Williams leans heavily in the direction of two-dimensional flow of dry fluids. Coleman is most interesting; he has an introductory chapter on the results needed from probability and goes on to problems of random walks, Markov chains and a few on renewal and queueing theory. All three are useful supplements to conventional textbooks.

C. W. Kilmister

On time's arrow

An Inventive Universe
by K. G. Denbigh
Hutchinson, £3.75
ISBN 0 09 121100 X

If the earliest mythologies form any basis for judgment, the question of time has engaged man's attention for millennia. But our modern concern for the nature of time must be related more directly to the development of scientific ideas from the seventeenth century onwards. The discussion in scientific terms gathered particular strength in the nineteenth century. One reason was the debate on space and time that led up to Einstein's concepts of relativity in the early years of the present century. (The first chapter of H. G. Wells's *The Time Machine* provides a fascinating illustration of this debate in progress.) A second reason stems from the growth of nineteenth-century physics. It became clear, on the one hand, that the main unifying principles of physics could be expressed in terms of the conservation of some quantity—most importantly, of energy. At about the same period, it also became apparent that thermodynamics was an exception: one of its basic laws could not be expressed via a conservation principle. This had an immediate relevance for the discussion of time. Where conservation laws apply, there is a certain symmetry with regard to time: a film of two billiard balls colliding can be run backwards without appearing ridiculous since momentum is conserved. But a film of an ice cube melting in a glass of water cannot be run backwards convincingly: we are within the realms of thermodynamics.

Professor Denbigh's book is concerned essentially with the question of whether time is a unidirectional process—the "never-ending stream" image of western thought—or whether, instead, it is a mental construct imposed by the human mind on a basically non-directional eternity. Most scientists who have been led to examine this question in recent years have been cosmologists, and so have had a special interest in time and relativity. Professor Denbigh as a thermodynamicist is more concerned with the implications of this topic for the discussion of time's arrow. He divides theories of time into two groups (following McTaggart)—the A-series and the B-series. The former can be described, very roughly, as seeing the reality of time in terms of its progress, whereas the latter sees all events—past, present and future—as having an equal reality. The B-series approach has often attracted proponents of relativity, but Professor Denbigh contends that no theory of this type can readily be squared with the dynamic requirements. He therefore comes down firmly in favour of the reality of a unidirectional time's arrow.

This conclusion is reached halfway through the book. The second half begins with a consideration of the problems presented by life processes, more especially by the apparent increase in complexity of living creatures with time—something that has often been held to conflict with the tenets of thermodynamics. The author proceeds to a consideration of determinism, which he relates to views of time such as are found in theories of the B-series. The relation of these is therefore seen as allowing genuine innovations to occur in the universe, and this conclusion leads to a discussion of the inventive processes implied in the title of the book.

It would be impossible to examine here all the points raised by Professor Denbigh. Instead, I shall mention three minor criticisms (while expressing my appreciation of the book as a whole). First, a number of peripheral topics are omitted that might have been worth a passing comment. For example, to what extent would the occurrence of precognition alter his judgment on theories of time? Second, occasional statements are made so dogmatically that they almost automatically seek opposition. Consider, for example, the assertion that, "it is *not conceivable* that [mental processes] could ever occur in the reverse temporal sequence". (Author's italics.) Yet at least one science-fiction novel depends for its plot on just such a supposition. Finally, I am not entirely convinced by all the distinctions drawn. Thus the differentiation introduced between "orderliness" and "organization" is a little imprecise.

Professor Denbigh tries to show, "the temporal processes as having a more active character than science usually presents". If, perhaps, the treatment is too brief to carry complete conviction at all points, the attempt is still commendable. The writing is fluent, and reveals a wide acquaintance with the subject: the notes to each chapter provide an excellent guide to the literature.

Jack Meadows

Relative movements

Positional Astronomy
by Derek McNally
Muller, £8.50 and £4.25
ISBN 0 584 10169 4 and 10168 6

Astrometry is an active though not very well defined branch of science concerned with the precise measurement and prediction of the changing positions of celestial objects in the sky. The subject extends from the practical requirements of the navigator and surveyor on the one hand to research into the theory of gravity on the other.

It might be thought that these various interests merge over a sufficiently wide area to warrant the existence of general textbooks on the subject, but in practice it is customary for students pursuing disciplines such as geodesy or astrodynamics to rely on supporting chapters in other books which cover the elements of positional astronomy. It is the student of astronomy and geophysics seeking a deeper understanding of the forces which give rise to the observed relative movements of the earth, the planets, the stars and even the galaxies who is somewhat neglected, and Dr McNally's book presumably is aimed at them.

The fact that virtually no modern textbooks exist in this subject probably reflects the difficulty of the author's task, since positional astronomy has a reputation for dryness and musty catalogues which has to be surmounted in the face of the apparent counter attractions of modern astrophysics really deserved since the techniques of the subject now have a considerable impact in many fields. The author points out in the preface that the book has grown out of a course of lectures, and doubtless the spoken word would go some way to avoiding dryness but I feel that the approach leans too heavily on that of Smart's *Text Book on Spherical Astronomy*, written in 1931. Since then, quite apart from the enormous advances in instrumental techniques, the more widespread use of matrix and vector algebra and particularly the arrival of computers have eliminated many of the purely algebraic and arithmetical difficulties that arise in the use of spherical astronomy, and have left the investigator free to concentrate on the more interesting fundamental physical and statistical problems.

Dr McNally argues against taking advantage of these developments on the grounds that first-year undergraduate students may not be sufficiently advanced and computers are not always available, but I would seriously question whether these constraints are so strong now as to justify the continued presentation of this subject in historical clothing.

However, while the professional astrometer (if that is the word) seems reluctant to fill a conspicuous gap in the astronomical literature, it seems unfair to fire complaints at Dr McNally's modestly written, thoughtful and well presented textbook which should undoubtedly be an aid to the otherwise deprived student.

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Six Research Fellowships will be offered, to be taken up in the near future. Appointment will be for one year in the first instance with the possibility of renewal for a second year. Fellowships could possibly be renewed also for a third year, but in competition with any new applications. The Fellowships will be tenable in at least four of the following academic Departments for work in the broad areas stated below:

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AUSTRALIA
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In the Centre for the Study of Urban Education. Applicants should have qualifications in the social sciences with particular interests and experience in primary education or educational disadvantage. Applicants should possess a higher degree; teaching qualifications and experience would be an advantage. The appointee will have the opportunity of teaching in all the degree and diploma courses and will be expected to pursue research in the areas of own special interests.

Salary: Lecturer, $A11,655 by yearly increments to $A13,455; Senior Lecturer $A16,264 by 5 yearly to $A18,041.

Further information and application forms are available from the Association of Commonwealth Universities, 36 Gordon Square, London WC1H 0PF, from the Registrar, La Trobe University, Bundoora, Victoria, Australia 3083.

Applications close on August 25, 1975.

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PROFESSOR
HISTORY AND PHILOSOPHY OF SCIENCE

Applications are invited for appointment to the foundation chair. Candidates will be expected to develop the existing Department of History and Philosophy of Science and to supervise and participate in teaching and examining students in the Department. Applicants should be engaged in and promote research and have a special study in the field of the Chair.

Applicants may have interests in any area of the discipline but preferably should have an interest in the history of scientific development especially in the 19th and 20th centuries.

Salary $A25,000 to $A30,000 per annum. Subject to the consent of the University Council, professors may undertake a limited amount of higher consultative work. The University reserves the right to fill the Chair by promotion.

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Salary $A11,655-$A15,540 per annum. Superannuation. Travelling and removal allowances, repatriation, study leave and temporary housing assistance.

Information and application procedure available from the Academic Registrar, Monash University, Wellington Road, Clayton, Victoria 3168, Australia, or the Secretary (Universities), Association of Commonwealth Universities, 36 Gordon Square, London WC1H 0PF. Enquiries about the Department to the Chairman, Professor M. A. Wallace, in the University.

Closing date 13th September, 1975. The University reserves the right to make no appointment or to appoint by invitation.

AUSTRALIA
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LECTURERS IN POLITICS
(Two positions)

Applications from suitably qualified persons will be received for the following positions, tenable at the Bundoora campus:
Politics: Lecturer to Associate Professorship.

Salary $A11,655 to $A18,041 to $A19,700 to $A15,615.

Further information and application forms are available from the Association of Commonwealth Universities, 36 Gordon Square, London WC1H 0PF, or from the Registrar, La Trobe University, Bundoora, Victoria, Australia, 3083.

Applications close on September 13, 1975.

BELFAST
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LECTURESHIP IN PHILOSOPHY

Applications are invited for the post of lecturer in Philosophy, tenable from 1st January, 1976 or such later date as may be arranged. Qualification in moral philosophy and at least one other branch of philosophy are essential.

Salary scale £2,118 to £4,692 per annum, rising (under review) with contributory pension rights under F.S.S.U.P.S.S., initial placing on the salary scale will depend on qualifications and experience. Assistance is available with removal expenses.

Further particulars may be obtained from the Personnel Officer, the Queen's University of Belfast, Belfast BT7 1NN, to whom completed applications should be returned not later than 30th September 1975. Please quote Ref. 74/THES).

BRADFORD
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LECTURER IN SOCIOLOGY

Applications are invited for a suitably qualified person to teach at undergraduate and postgraduate levels. They should have active interests and research interests in either or both the sociology of social problems and the sociology of social policy.

Salary, with scale £2,778 to £6,090 per annum under review. Superannuation.

Further particulars and application forms are obtainable by August 18, 1975, from the Registrar of the University, Bradford, West Yorkshire BD7 1DP.

AUSTRALIA
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PERTH

COMMERCE

Applications are invited for vacancies, temporary or permanent, in Accounting, at one or more of the following levels in the Department of Commerce: LECTURER or SENIOR LECTURER in ACCOUNTING and ORGANISATION and MANAGEMENT.

Courses offered in the Department include Accounting, Management, Industrial Relations, Marketing, Business Finance and Economics. Computer facilities are available.

The salary ranges are, Senior Lecturer $A16,264 to $A18,041 per annum; Lecturer, $A11,655 to $A15,540 p.a. Permanent conditions of appointment would include superannuation benefits and provision for study leave and long-service leave, and housing assistance, while temporary appointees would be entitled to fares for themselves and their families from elsewhere to appointment or return, and to fares for a visiting appointment could be negotiated.

Further information may be obtained from the Head of the Department, Dr. R. M. G. Nichols.

Applications, in duplicate and giving full personal particulars, qualifications and experience, should reach the Staffing Officer, University of Western Australia, Nedlands, 6009, by 30th June, 1975. Applicants should request three referees to write immediately to the Staffing Officer.

AUSTRALIA
AUSTRALIAN NATIONAL UNIVERSITY
Institute of Advanced Studies

HEAD OF THE RESEARCH SCHOOL OF PACIFIC STUDIES

The university is taking steps to appoint a Head of the Research School of Pacific Studies to succeed Professor D. J. Lovell who has recently accepted appointment at the university's Australian campus.

The person to be appointed will hold a chair in the university and should have experience in the social sciences appropriate to the school. The present interests of the school concern Oceania and Pacific countries as well as Australia, but a regional or theoretical and empirical, embracing anthropology, economics (especially of underdeveloped countries), history (mainly of China and Japan), Japanese studies, bibliography and documentation of international relations (including strategic and defence studies), linguistics of Polynesia and Southeast Asian languages and prehistoric archaeology.

The tenure of the office will be considered on the merits of the person recommended for appointment, but the appointment as professor will be until retiring age.

Those who may be interested in being considered for the appointment are invited to write before September 15, 1975, for further information, from whom further information and application forms should be sent by 31st October, 1975. Applications should be sent to P.O. Box 4, Canberra A.C.T. 2600, Australia.

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DEPARTMENT OF SOCIAL MEDICINE

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An experienced research worker is required to join a multi-disciplinary team investigating problems arising from dependency, nursing workload and standards of nursing care. The work is financed by the D.H.S.S. and is being undertaken jointly by the Health Services Research Unit, University of Birmingham and the Regional Health Authority. Further particulars will be supplied on request.

The work will involve the development and methods of identifying standards of nursing care, developing appropriate studies, collecting and analysing data and the presentation of reports in connection with the research team and with members of the team. Previous research experience is essential and experience of field studies and survey work would be desirable. The appointment will be for the duration of the research contract, currently estimated at two years.

Salary £2,140 to £3,990 plus superannuation and threshold payments. Initial salary according to qualifications and experience. Salary according to qualifications and experience.

Applications to Dr. Catherine Ross Bloom, Health Services Research Centre, Department of Social Medicine, University of Birmingham, Birmingham B15 2TJ, giving information about research experience and educational qualifications. Closing date for applications August 31, 1975.

DURHAM
THE UNIVERSITY

DEPARTMENT OF POLITICS

Applications are invited for two Lectureships in Politics, tenable from 1 October 1975. Salary on the scale £1,809 to £2,757 per annum, plus threshold payments and superannuation.

Particulars from the Registrar and Secretary, Old Shire Hall, Durham DH1 3HP, to whom applications (three copies) should be sent by 20 August.

DURHAM
THE UNIVERSITY

RESEARCH ASSISTANT IN ECONOMICS

Applications are invited for the post of RESEARCH ASSISTANT in ECONOMICS from 1st October 1975, tenable for two years in the first instance, tenure for a third and final year being dependent on satisfactory progress. Applicants should have a good honours degree in Economics or Mathematics. Some experience of econometrics would be desirable.

Salary £3,300-£3,705 per annum, plus £300 London Allowance, with superannuation benefits.

Further particulars and application forms may be obtained from the Registrar, University of Durham, Old Shire Hall, Durham DH1 3HP, to whom applications should be sent by 1st September 1975.

EAST ANGLIA
THE UNIVERSITY
Norwich

Applications are invited from graduates with research training or experience for appointment as a RESEARCH ASSISTANT in the Centre for Applied Research in Education. The appointment will be to the Social Science Research Council scale for Research Assistants (approximately £2,300-£3,705 per annum) with superannuation benefits. Starting salary will depend on qualifications and experience.

Further particulars and application forms may be obtained from the Administrative Assistant, Centre for Applied Research in Education, University of East Anglia, Norwich NR4 7TJ, to whom applications, naming three referees, should be sent by 1st September, 1975.

GLASGOW
THE UNIVERSITY

LECTURERSHIPS IN PHILOSOPHY

Applications are invited for two Lectureships in the Department of Moral Philosophy from 1st October, 1975, or such date to be arranged. Salary will be within the range £2,118 to £4,692 per annum, under the F.S.S.U.P.S.S. scheme. The Lecturers Scale with placement according to qualifications and experience. Threshold payments are payable in addition to the basic salaries. Superannuation Scheme will apply.

For one Lectureship an interest in the Philosophy of Law is desirable but not essential. For the other Lectureship, which will be shared with the Department of Logic and Rhetoric, a specialism in the Philosophy of Social Science is desirable.

Further particulars may be had from the Secretary of the University Court (Room 181), the University, Glasgow G12 8QQ, with whom applications (3 copies), including the names and addresses of three referees, should be lodged on or before 15th August, 1975.

In reply please quote Reference Number 37141.

HONG KONG
THE UNIVERSITY

SENIOR LECTURERSHIP/ LECTURERSHIP IN ACCOUNTANCY

Applications are invited for one post of Senior Lecturer/Lecturer in Accountancy. Applicants should be qualified persons with a first degree in Economics or Commerce with additional interest in Quantitative Methods. Salary scale for Senior Lecturer (maximum salaries) (superannuation benefits): £5,400-£6,300 (£6,975-£7,980 with double overseas allowance); Lecturer £3,600-£4,500 (£4,650-£5,805 with double overseas allowance). Starting salary will depend on qualifications and experience. Further particulars and application forms may be obtained from the Association of Commonwealth Universities, 36 Gordon Square, London WC1H 0PF, or from the Registrar (U.G.C.), University of Hong Kong, Hong Kong. Closing date for receipt of applications 31st October, 1975.

JAMAICA
UNIVERSITY OF THE WEST INDIES

Applications are invited for the post of PROFESSOR of EDUCATION. Applicants should be qualified in one of the following educational fields: History of Education, Educational Technology, Rural Education or Curriculum and Instruction.

Salary scale (under review): £5,124-£6,372 per annum. (1 sterling equals J$2.40). Contributory superannuation at rate of 10 per cent of salary of a pensionable officer. Gratuity at rate of 25 per cent of salary payable on satisfactory completion of each contract period. Liberal leave and travel grants. Family passages.

Detailed applications are required, including curriculum vitae and names of three referees, which may be sent by telegram or airmail to the Registrar, University of the West Indies, Kingston 7, Jamaica.

Detailed publishers are available from the same source of information as for the Barbados advertisement, 99-01 Tottenham Court Road, London W1P 9HT.

LEEDS
THE UNIVERSITY

DEPARTMENT OF ARCHAEOLOGY

Applications are invited for the post of RESEARCH ASSISTANT in Archaeology. The post is supported by the Science Research Council and will be tenable for two years in the first instance, renewable for a third and final year. Duties will be shared with those in the Ergonomics Research Group of the Department. Some of the research will be concerned with problems of Middle Eastern prehistory and applicants with particular sympathies within the Department.

Salary on the scale £2,420 to £3,510 with superannuation benefits.

Further particulars from the Registrar and Secretary, The University, Leeds LS2 9JT, to whom applications (three copies) should be sent by 15th August, 1975.

LONDON
THE UNIVERSITY

CHAIR OF ECCLESIASTICAL HISTORY, KING'S COLLEGE

The Senate invites applications for the above chair with effect from 1st October 1976.

Applications (10 copies) should reach the undersigned not later than 1 November 1975 by whom academic particulars may be obtained.

The Secretary to the Committee, University of London, Senate House, W.C.1E 7HU, from whom further particulars may be obtained.

LONDON
THE UNIVERSITY

CHAIR OF SOCIAL GEOGRAPHY, LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The Senate invites applications for the above chair, salary £5,991 plus £2,084 London Allowance. Applications (10 copies) should be received not later than 15 September 1975 by the Academic Registrar (T.H.E.S.), University of London, Senate House, London, W.C.1E 7HU, from whom further particulars are available.

LONDON
THE UNIVERSITY

CHAIR OF ECCLESIASTICAL HISTORY, KING'S COLLEGE

The Senate invites applications for the above chair with effect from 1st October 1976.

Applications (10 copies) should reach the undersigned not later than 1 November 1975 by whom academic particulars may be obtained.

The Secretary to the Committee, University of London, Senate House, W.C.1E 7HU, from whom further particulars are available.

Universities continued

CARDIFF
UNIVERSITY COLLEGE

Applications are invited for the following vacancy :—

TUTORIAL FELLOW in the FACULTY OF LEGISLATION AND SOCIAL STUDIES. Duties will include tuition and may in the Departments of the faculty and the successful candidate will be required to work until 30th September. Salary range £2,520 to £2,778. Under 18½ by commencement 1st October, 1975.

Application, together with the names and addresses of two referees should be forwarded to the Registrar, University College, PO Box 78, Cardiff, CF1 1XL, from whom further particulars may be obtained. Closing date for applications 18th August, 1975. Please quote Ref. 6/585.

DURHAM
THE UNIVERSITY
TEMPORARY LECTURESHIP IN MUSIC

Applications are invited for a temporary LECTURESHIP in MUSIC for one year from 1 January 1976, from persons with specialist knowledge of Twentieth Century Music and with experience of teaching composition.

Salary within the range £2,778 to £4,635—new scales agreed by negotiation and subject to further review plus superannuation.

Further particulars are available from the Registrar and Secretary, Old Elvet, Durham DH1 3HP, to whom applications (nine copies), including three referees, should be submitted not later than Tuesday, 2 September, 1975.

KENYA
UNIVERSITY OF NAIROBI

Applications are invited for two LECTURERSHIPS in History. Applicants should possess a Ph.D in History. Preference will be given to candidates with specialisation or experience in University teaching in one of the following areas : West Africa, South and Central Africa, Europe, Latin America, U.S.S.R., Middle East and/or Africa and the Indian Ocean.

Salary scale: K£1,980 to K£3,780 per annum (K£1 equals £1.11 sterling).

The Kenya Government may supplement salary in range £2,521 to £3,771 per annum (attention is drawn to a supplementation of up to £1,671 per annum according to a single annuitant rate) in respect of all taxes and provide children's education allowances and holiday visit passages (50% family passages terms allowances).

Detailed applications (one copy) including a curriculum vitae and naming referees should be sent to arrive by 15th September, 1975 to the Registrar, The University of Nairobi, P.O. Box 30197, Nairobi, Kenya.

Applicants resident in the United Kingdom should write to the Inter-University Council, 90/93 Tottenham Court Road, London W1P 0DY, further particulars may be obtained from either address

LONDON
THE UNIVERSITY
GHAIR OF ECONOMIC HISTORY AT LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The Senate invite applications for the above chair. Salary not less than £7,000 plus London allowance. Applications (10 copies) should be received not later than September 15, 1975, to the Academic Registrar (THES), University of London, Senate House, London WC1E 7HU, from whom further particulars may be obtained.

MANCHESTER
THE UNIVERSITY
POSTGRADUATE RESEARCH ASSOCIATE required to assist in the computer simulation of the forging of alcohol by the proteinase "Alcalase" in the Department of Biochemistry.

Applicants should have experience in a biological science and preferably in biochemistry and a chemical, physical or mathematical subject that would be relevant to the project performed. The post is tenable for two years from October 1, 1975, possibility of extension and of obtaining a higher degree. The salary within the range £1,667 to £2,737 per annum (new scale agreed by negotiation) according to experience, subject to further review.

Full applications naming two referees should be sent as soon as possible to Dr. E. Hodson, Department of Biochemistry (Chemistry Building), The University, Manchester M13 9PL.

MELBOURNE
THE UNIVERSITY
ERNEST SCOTT CHAIR OF HISTORY

This Chair is vacant following the appointment of Professor J. S. Bromley to the Vice-Chancellorship (Research and Advancement) in the Department (Dean) of Arts. Applications (Australian, American, Pacific and Far Eastern History, and applicants with other interests will be considered).

Salary at present $A23,500 per annum.

Further information, including research and teaching undertaken in the Department, staffing, emoluments, details of application procedure, superannuation, travel and removal expenses, housing assistance and conditions of appointment, is available from the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF.

Applications close on 1st November, 1975.

MALAYSIA
UNIVERSITI SAINS MALAYSIA
Penang, Malaysia

Academic Appointments

Applications are invited for the following posts :

SCHOOL OF CHEMICAL SCIENCES

SENIOR LECTURER LECTURER in ORGANIC CHEMISTRY PHYSICAL CHEMISTRY and INORGANIC CHEMISTRY

LECTURER in the field of ANALYTICAL CHEMISTRY.

SCHOOL OF HOUSING, BUILDING AND PLANNING

Lecturers in the following fields :

ARCHITECTURE BUILDING SCIENCE, BUILDING MATERIALS AND DESIGN, TOWN AND COUNTRY PLANNING, BUILDING ECONOMICS, SYSTEMS AND MANAGEMENT, and QUANTITY SURVEYING.

Qualifications required :

Senior Lecturers : with qualifications and experience in the fields mentioned, together with post-doctoral experience in teaching, research and/or industries need apply. The post of Lecturer would require a minimum qualification of a master's degree.

Salary range per annum :

Senior Lecturer, from M$39,500 to M$50,500, and Lecturer, from M$25,500 to M$35,700. Passage assistance for successful candidates. Provident fund and medical benefits.

Apply to Registrar, Establishment Section, Universiti Sains Malaysia, Minden, Penang, Malaysia. Enclose personal data and references.

The closing date of receipt of application is 1st September, 1975.

Check with your local bank for up-to-date exchange rates.

NEW ZEALAND
UNIVERSITY OF OTAGO
Dunedin

TEACHING FELLOW IN THE FACULTY OF SCIENCE

Applications are invited for a Teaching Fellowship, available in Departments of the Faculty of Science. Duties will include teaching and research. The latter is normally being directed towards the degree of Ph.D. Stipend : NZ$3,175 per annum for two years : NZ$3,425 for the third year.

Further particulars are available from the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF, or from the Registrar of the university.

Applications close on September 26, 1975.

NEW ZEALAND
UNIVERSITY OF WAIKATO
Hamilton

LECTURER/SENIOR LECTURER IN EDUCATION

The University invites applications for the position of Lecturer/Senior Lecturer in Education. The successful applicant will be primarily concerned with the training of primary teachers, although additional areas of interest and competence will be welcomed.

The position will be available from 1 January 1976. The salary scale is : Lecturer—NZ$9,000 to NZ$11,817 per annum. Senior Lecturer—NZ$10,091 to NZ$13,817 per annum.

Applications close on 15 September 1975 and should be assembled in a prescribed format. Details of the required application procedure and conditions of employment are available from the Registrar, University of Waikato, Private Bag, Hamilton, New Zealand, or from the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF.

OXFORD
THE UNIVERSITY

HAWKINSON AND WORSWICK PROFESSORSHIP OF ANGLO-SAXON

The electors intend to proceed to an election to the Hawkinson and Worswick Professorship of Anglo-Saxon which is now vacant.

The stipend of the professor will be not less than £8,000 a year and is under review. Further particulars may be obtained from the Registrar, University Offices, Wellington Square, Oxford OX1 2JD, to whom applications (nine copies), together with three referees' testimonials (which may be received not later than) 31 October, 1975.

MANCHESTER
THE UNIVERSITY
INSTITUTE OF SCIENCE AND TECHNOLOGY
LECTURER
IN MECHANICAL ENGINEERING

Applications are invited for the above appointment in the Department of Mechanical Engineering. The appointment will be in the Thermodynamics and Fluid Mechanics Division of the Department of Mechanical Engineering. The Division is responsible for teaching and research in the areas of thermodynamics, fluid mechanics, gas dynamics and heat transfer, with particular emphasis on internal combustion engines, flow measurement, and aerodynamic flow in turbomachinery. The candidate will be expected to undertake and supervise research projects in one of the above fields under the direction of Professor R. S. Benson.

Salary on the scale £2,118 to £4,956 per annum under review with U.S.S.

Requests for application forms and further particulars, quoting reference ME/75/A, should be addressed to the Registrar, UMIST, P.O. Box 88, Manchester M60 1QD, to whom completed applications should be returned by 18th August, 1975.

MANCHESTER
THE UNIVERSITY
INSTITUTE OF SCIENCE AND TECHNOLOGY
LECTURESHIP IN CHEMICAL ENGINEERING

Applicants should possess a good honours degree in chemical engineering and preference will be given to those with higher degrees and/or industrial experience. The successful applicant will be expected to teach in the area of heat and mass transfer and be prepared to contribute actively to the work of the research group in mass transfer in separation processes. The Department is well equipped for both teaching and research work.

Salary will be on a scale rising to £4,956 per annum (revised from 1 October, 1975, to £5,088 per annum).

Enquiries for application forms and further particulars, quoting reference number CE/77/A, should be addressed to the Registrar, UMIST, P.O. Box 88, Manchester M60 1QD, to whom completed applications should be returned by 25th August, 1975.

OXFORD
THE UNIVERSITY
CHAIR OF PROFESSORSHIP OF THE INTERPRETATION OF HOLY SCRIPTURE

The electors intend to proceed to an election to the Grier Professorship of the Interpretation of Holy Scripture which will be vacant on 30 September, 1976.

The stipend of the professor will be not less than £8,000 a year and is under review. Further particulars may be obtained from the Registrar, University Offices, Wellington Square, Oxford, OX1 2JD, to whom applications (nine copies), together with three testimonials, should be received not later than 31 October, 1975.

THE OPEN UNIVERSITY
FACULTY OF ARTS
STAFF TUTOR IN ART HISTORY AND HISTORY OF ARCHITECTURE

Applications are invited for the tutorial post in Staff Tutor in Art History based at the Cambridge Region. Appointment will be made on the 1st October 1976 or as soon as possible thereafter.

Candidates should have good academic qualifications in the general field of Art History and/or 19th and 20th Century Architecture and Design, evidence of the work involves academic liaison and administration, and considerable travel.

Salary within scale : £2,118-£2,850 per annum (under review), plus threshold payment and membership of the Universities' Superannuation Scheme.

Further particulars and application forms are available from the Personnel Manager (STAFF), The Open University, PO Box 76, Walton Hall, Milton Keynes, MK7 6AA. Closing date : 30th August 1975.

OXFORD
THE UNIVERSITY
DEAN IRELAND'S PROFESSORSHIP OF EXEGESIS OF HOLY SCRIPTURE

The electors intend to proceed to an election to the Dean Ireland's Professorship of Exegesis of Holy Scripture which will be vacant on September 30, 1977.

The stipend of the professor will be not less than £8,000 a year and is under review. Further particulars may be obtained from the Registrar, University Offices, Wellington Square, Oxford OX1 2JD, to whom applications (nine copies), together with three referees' testimonials, should be received not later than October 31, 1975.

OXFORD
THE UNIVERSITY
ST. HILDA'S COLLEGE
Oxford OX4 1DY

TUTORIAL FELLOWSHIP IN MODERN HISTORY

St. Hilda's College proposes, if a suitable candidate presents himself or herself, to elect a Tutorial Fellow in Modern History in the autumn of the 1975/76 academic year, with a preference for the 19th and 20th centuries. The Fellowship will be tenable from 1st October 1976 or as soon as possible thereafter. The stipend will be £3,000 per annum. Further particulars may be obtained from the Secretary to the Governing Body, St. Hilda's College, Oxford OX4 1DY. Applications (6 copies) should be received by 1st October 1975. Candidates should arrange for three referees to send testimonials to reach the Secretary by the same date.

MALAYA
THE UNIVERSITY
LANGUAGE CENTRE

Applications are invited for the following posts in the LANGUAGE CENTRE :

Two posts of LECTURER : Candidates should possess : (i) A first class honours degree preferably in Linguistics or English. Preference will be given to candidates who possess a Master of Arts degree in the teaching of English as a second language. (ii) Experience in education or an equivalent professional qualification. (iii) Preferably with the ability to speak and write a second language and experience in teaching languages.

Two posts of LECTURER in the field of INTERPRETATION and TRANSLATION : Candidates should possess a Master's degree in Malay studies or English.

One post of LECTURER in the field of INTERPRETATION and TRANSLATION : Candidates should possess a Master's degree in Malay studies or English.

One post of LECTURER in the field of PHONETICS : Candidates should possess a Master's degree from a recognized University and should have followed a course in French. Experience in conference and/or simultaneous interpretation; knowledge of Malay and/or Arabic and English will be an advantage.

Salary : Malaysian Incentive (Langrev, sig. equiv.) : £2,400 to £3,900; Lecturer : £3,600 to £5,301; Lecturer, Senior Scale : £4,140 to £5,301; Reader : £4,140 to £5,765 to £6,636. The commencing salary of persons with the Ph.D. degree shall be $2,856 per annum.

Further particulars and application forms and information obtainable from the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London, WC1H 0PF.

The closing date for the receipt of applications is 27 August, 1975.

RHODESIA
THE UNIVERSITY
LECTURESHIPS IN THE INSTITUTE OF EDUCATION

Recent developments in African Primary Education in Rhodesia are likely to lead to the creation of two lecturerships for early childhood education.

Four posts of LECTURER : Candidates should possess a first degree preferably in Linguistics or English. Preference will be given to candidates who possess a Master of Arts degree in the teaching of English as a second language. Also, candidates should have experience in education or an equivalent professional teaching qualification. (ii) Preference will be given to candidates who have experience in teaching a second language and experience in training teachers.

Two posts of LECTURER in the fields of PRACTICAL TRANSLATION : Candidates should possess a Master's degree in Malay studies or English.

One post of LECTURER in the field of INTERPRETATION THEORY : Candidates should possess—A Master's degree in French language and Literature from a recognized University and should have followed a course in French. Experience in conference and/or simultaneous interpretation; knowledge of Malay and/or Arabic and English will be an advantage.

Salary : Malaysian Incentive (Langrev, sig. equiv.) : £2,400 to £3,900; Lecturer : £3,600 to £5,301; Lecturer, Senior Scale : £4,140 to £5,301; Reader : £4,140 to £5,765 to £6,636. The commencing salary of persons with the Ph.D. degree shall be $2,856 per annum.

Further particulars and application forms and information obtainable from the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London, WC1H 0PF.

The closing date for the receipt of applications is 27 August, 1975.

SIERRA LEONE
THE UNIVERSITY
FOURAH BAY COLLEGE

Applications are invited for the post of (a) PROFESSOR/READER and (b) LECTURER in HISTORY. The Professorship carries with it the headship of the Department of History. The successful applicants are expected to assume duties on or about 1st April 1976. Candidates for the Professorship should be fully qualified to the following fields in honours degree : Ghana, Nigeria, West African History, West African Literature, Sierra Leone, Liberia, Gambia, Guinea, Ivory Coast, Togo, Dahomey, Upper Volta, Mali, Niger, Senegal, Mauritania, Spanish or American History. Candidates should be qualified to teach the same fields, Ghana, Nigeria, West African, Sierra Leone, Liberia, Gambia, Guinea, Ivory Coast, Togo, Dahomey, Upper Volta, Mali, Niger, Senegal, Mauritania, Spanish or American History. Ph.D. or equivalent preferred.

Salary scales (under review) (a) £3,945 to £4,995 per annum. (b) £2,535-£3,690 per annum (£1 sterling equals Le2.). The successful applicant will be placed on salary at Professorial level or Reader level (Le5,000 per annum) (sterling) for married : Le4,000 (sterling) for single : Le2,844 (sterling) for a single candidate with dependent children and provide children's education allowances and passages for all dependants on initial engagement. Income tax is at low rates and supplementation rates are payable. Gratuity at 15% of salary. Passages : 50% family passages. Generous leave. Subsidised housing at low rent. Car loan facilities. Provident fund. Medical benefits.

Further particulars of the appointment may be obtained from the Registrar, Secretary to the Council, Fourah Bay College, Freetown, Sierra Leone, to whom applications should be sent by 19th September, 1975, in the case of candidates resident in Sierra Leone, and by 26th September, 1975, in the case of candidates resident elsewhere. Short-listed candidates will be interviewed in London.

Candidates should have good academic qualifications in the general field of Art History and/or 19th and 20th Century Architecture and Design, evidence of the work involves academic liaison and administration, and considerable travel.

Salary within scale : £2,118-£2,850 per annum (under review), plus threshold payment and membership of the Universities' Superannuation Scheme.

Further particulars and application forms are available from the Personnel Manager (STAFF), The Open University, PO Box 76, Walton Hall, Milton Keynes, MK7 6AA. Closing date : 30th August 1975.

SHEFFIELD
THE UNIVERSITY
DEPARTMENT OF BOTANY

Applications invited for a post of LECTURER in the above department, tenable from October 1975 or such later date as may be arranged, to initiate courses in ecological conservation of the natural environment at Science (experience in population studies advantageous), and also to assist in courses in ecology, including field courses.

Initial salary in range £2,778 to £3,450 on national scale £2,778 to £6,000.

Particulars from Registrar and Secretary, The University, Sheffield S10 2TN, to whom applications (five copies) should be sent by September 30. Quote Ref. R.368 D17.

SHEFFIELD
THE UNIVERSITY
DEPARTMENT OF GEOGRAPHY

Applications are invited from graduates for a post of JUNIOR RESEARCH FELLOW in the above Department, tenable from 1 October, 1975. Tenure one year in the first instance, renewable for a further year. Salary in range £1,667 to £2,737 with superannuation provision. Staff—£3,800 to £6,737 with superannuation provision.

Further particulars from The Registrar and Secretary, to whom applications (4 copies) should be sent by 30 August, 1975. Quote Ref. R.370 D17.

SHEFFIELD
THE UNIVERSITY
DEPARTMENT OF ENGLISH LITERATURE

Applications are invited for the post of LECTURER in ENGLISH LITERATURE tenable from 1 October, 1975, or a date to be arranged. Candidates should have a special interest in Drama and be prepared to contribute to the Department's work in the theory of Practical Drama. Initial salary in the range £2,778 to £3,390 on the national scale £2,778 to £6,000.

Particulars from the Registrar and Secretary, The University, Sheffield S10 2TN to whom applications (5 copies) should be sent by 1st September 1975. Quoting reference R.366 D17.

SHEFFIELD
THE UNIVERSITY
DEPARTMENT OF ENGLISH LITERATURE

Applications are invited for the post of LECTURER in ENGLISH LITERATURE tenable from 1st October 1975 or such date to be arranged. Candidates should have a special interest in Drama and be prepared to contribute to the Department's work in the theory of Practical Drama.

Initial salary in the range £2,778 to £3,390 on the national scale £2,778 to £6,000.

Particulars from the Registrar and Secretary, The University, Sheffield S10 2TN, to whom applications (five copies) should be sent by 1st September 1975. Quoting Ref. R.366/AL.

SHEFFIELD
THE UNIVERSITY
CHAIR OF ENGLISH LITERATURE

Applications are invited for a newly established appointment to a CHAIR OF ENGLISH LITERATURE tenable from a date to be arranged as early as possible in the session 1976-77. A scholar with interests in the literature of the period between 1780 and the present day would be preferred.

Salary in the range approved for professorial appointments with superannuation provision. Further particulars from the Registrar and Secretary, The University, Sheffield S10 2TN, to whom applications (one copy only) should be sent by 30 September, 1975. Quote Ref. R.367 D17.

SHEFFIELD
THE UNIVERSITY
LECTURER IN LAW

Applications are invited for the above post, tenable from October 1, 1975 or such later date as may be arranged. Initial salary in the range £2,778 to £3,450 on national scale £2,778 to £6,000, with superannuation provision.

Further particulars from the Registrar and Secretary, The University, Sheffield S10 2TN, to whom applications (five copies) should be sent by 30 September, 1975. Quote Ref. R.371 D17.

COMMITTEE OF VICE-CHANCELLORS AND PRINCIPALS

Applications are invited for the post of ASSISTANT SECRETARY with the title of Secretary of the Committee of Vice-Chancellors and Principals of the Universities of the United Kingdom.

The person appointed will be concerned principally with the academic areas of interest of the Committee. He or she will be expected to assume responsibility for the work of a standing committee or committees, together with the sub-committees which fall within those areas of interest, and in particular the Committee's activities and in particular the Committee's Selection Committee. Applicants should be graduates with considerable administrative experience, preferably in a university.

The salary scale for the post will be, from 1 October, 1975, £6,838 to £7,346 (subject to review) rising by annual increments of a similar quantum to £8,884 on 1 October 1976 and to £9,422 on 1 October 1977 (subject to further review). Starting salary will be assessed according to qualifications and experience.

Commencing salary will be assessed according to qualifications and experience. Superannuation scheme according to the University Superannuation Scheme according to individual circumstances.

Further particulars of the post may be obtained from the Executive Secretary to the Committee, 29 Tavistock Square, London WC1H 9EZ, with whom applications should be lodged by Monday, 15 September, 1975.

SHEFFIELD
POLYTECHNIC
DEPARTMENT OF URBAN AND REGIONAL STUDIES
PRINCIPAL LECTURER
SENIOR LECTURER
LECTURER II in URBAN ECONOMICS

The person appointed will join a multi-disciplinary team engaged in teaching and course development at undergraduate and post-graduate level. The department offers full time and part-time courses in Urban and Regional Planning, Urban Economics, BA (Hons) Urban Studies, Associateship and Diploma of Land Use Studies, research and consultancy are encouraged.

Salary will be assessed according to qualifications and experience.

Senior Lecturer: £5,940-£6,642 (bar) to £7,878
Senior Lecturer: £5,031-£6,642 (bar) to £7,878
Lecturer II: £3,972 to £5,031

Application forms and further details obtainable from the Personnel Officer, Sheffield Polytechnic, Pond Street, Sheffield 1. Telephone 20911 ext. 2213, to whom completed forms should be returned within fourteen days of the appearance of this advertisement.

Polytechnics

Plymouth Polytechnic

Lecturer II in Genetics

With experience of teaching basic genetics and with an interest in plant breeding, ecological genetics, or fish genetics.

SALARY SCALE
LECTURER II
£3,279-£5,493

Application forms, returnable in two weeks, may be obtained from :

Personnel Officer (THE 1/8),
Plymouth Polytechnic,
Drake's Circus,
Plymouth PL4 8AA

CITY OF LONDON POLYTECHNIC
Department of Psychology
LECTURERS (Grade II)

Two posts are now vacant in the Department of Psychology one of which is likely to be temporary and for 6 months in the first instance.

1. Psycholinguistics and language development. Teaching experience in thinking, reasoning, problem solving and cognitive processes would be expected. Experience in cybernetics and behaviour simulation would be an advantage. Involvement in the development of post-graduate and part-time courses concerning language, numeracy and remedial problems related to these areas would be expected.

2. Physiological psychology. Experience in animal behaviour and/or psychopharmacology would be an advantage. This post also involves teaching to the part-time M.Sc. course in The Neuropsychological Basis of Behaviour.

Candidates should possess teaching and research experience appropriate to undergraduate studies of Psychology within the BA/BSc Modular Degree Scheme and at post-graduate level.

Salary according to Burnham (PE) Report: Lecturer II £3,279-£5,493 + £351 London Weighting.

Further details and an application form may be obtained from the Assistant Secretary, City of London Polytechnic, 117-119 Roundwith, London EC1A 1BU.

SHEFFIELD
POLYTECHNIC
DEPARTMENT OF URBAN AND REGIONAL STUDIES
PRINCIPAL LECTURER
SENIOR LECTURER
LECTURER II in URBAN ECONOMICS

The person appointed will join a multi-disciplinary team engaged in teaching and course development at undergraduate and post-graduate level. The department offers full time and part-time courses in Urban and Regional Planning, Urban Economics, BA (Hons) Urban Studies, Associateship and Diploma of Land Use Studies, research and consultancy are encouraged.

Salary will be assessed according to qualifications and experience.

Senior Lecturer: £5,940-£6,642 (bar) to £7,878
Senior Lecturer: £5,031-£6,642 (bar) to £7,878
Lecturer II: £3,972 to £5,031

Application forms and further details obtainable from the Personnel Officer, Sheffield Polytechnic, Pond Street, Sheffield 1. Telephone 20911 ext. 2213, to whom completed forms should be returned within fourteen days of the appearance of this advertisement.

Polytechnics continued

pcl
Professional Computer Limited

School of Engineering and Science
Division of Science

Reader in Instrumentation — Temporary Appointment

Applications are invited for an appointment as Reader on a temporary basis for a period of two years.

The successful candidate will be expected to undertake and supervise research in Instrumentation, with a bias towards Physical and/or Medical Instrumentation, contribute to the teaching of postgraduate courses and short courses in this field, and be able to attract finance for supporting research from Government bodies and/or industry.

Lecturer II in Paramedical Studies

Applications are invited for the above post in the field of Psychology to cover both psychological and behavioural topics on the modular BSc Science degree, and on the Remedial Therapists diploma course. Experience in modular course design and in teaching Remedial Therapist students would be an advantage.

Division of Engineering

Senior Lecturer in Mechanical Engineering

Applications are invited for the above appointment in the Division of Engineering. The main responsibility for the successful candidate will be lecturing and laboratory development in Stress Analysis to Honours standard on the BSc (CNAA) Mechanical Engineering degree course.

School of Communication
Cultural and Community Studies Unit

Part-time Lecturer in Literature

Applicants should have a major interest in English, European and American fiction and its social contexts from 18th Century to present day. He/she will be required to teach on evening courses, short courses for teachers and to contribute to interdisciplinary Cultural Studies programmes.

Reader	£5352–£6780 (under review)
Senior Lecturer	£4657–£5361 (bar)–£6763 (under review)
Lecturer II	£3021–£4827 (under review)

plus Threshold Agreement for all posts.

Details and application forms from The Establishment Officer The Polytechnic of Central London 309 Regent Street London W1R 8AL. 01-580 2020 Ext 212. Closing date 18 August 1975.

PAISLEY COLLEGE
DEPARTMENT OF ECONOMICS & MANAGEMENT

Research Assistant

Required from 1st October, 1975, to participate in a one-year project on Hiring Practices and the Employment of Females. The study is financed jointly by the Manpower Services Commission and Training Services Agency and the salary will be on a scale from £2,300 to £2,800 per annum. Applicants should have a good honours degree and preferably an interest in labour economics.

Closing date two weeks after appearance of this advertisement.

Application forms and further particulars from Professor P. J. Sloane, Department of Economics & Management, Paisley College of Technology, High Street, Paisley (telephone 041 887 1241 ext. 25).

NELP

Applications are invited for the following posts :

Faculty of Environmental Studies
Department of Architecture

An Environmental Designer in Architecture at Senior Lecturer grade. Candidates should be competent to teach the practical application of Environmental Physics to the design of buildings. Teaching experience desirable. *(Ref. S/AO 258A)*

Interim Faculty of Art & Design
Senior Lecturer in Communication Design

Applications are invited for a Senior Lecturer to contribute to the work of the Communication Design Course as a design teacher and as a co-ordinator of studies across the mono areas of audio-visual, typographics and photography. Candidates should have substantial experience as designers in one or other of the above areas and be in sympathy with the generalist approach of the course. *(Ref. S/AO 256B)*

Senior Associate Lecturer in Fashion/Textile Design to teach Dress Design/Manufacture. Candidates should have experience in the marketing/promotion sector of the Fashion Industry. Some teaching experience is desirable. The period of appointment will be for one year in the first instance, but may be renewed for a further year. *(Ref. S/AO 258C)*

Applications are also invited for an Associate Part-time Lecturer to contribute audio visual work to communication studies. Candidates should have experience of community/educational use of media. *(Ref. S/AO 258D)*

Faculty of Arts
Department of Teaching Studies

Lecturer II in Infant Education, required from 1 January 1976, to contribute to an innovating pre-service teacher education programme. Candidates should have relevant experience in Infant Education. *(Ref. S/AO 266E)*

Faculty of Human Sciences

Research Assistant to work in the field of the history of mathematics and astronomy, with special reference to England about 1600 *(Ref S/AO 256C)*

Salary Scales : Senior Lecturer/
Senior Associate Lecturer £4,206-£5,412
Lecturer II £2,670-£4,476
Associate Lecturer £1,668-£1,790
(all above scales under review)
Research Assistant £1,544-£1,654
(Plus appropriate London Allowance and Threshold Payments)

Application form and further details from :
Academic Staffing Office (2)
North East London Polytechnic
Forest Road, London E17 4JB
Tel : 01-527 2272 Ext 157

North East London Polytechnic

Closing date : 26 August, 1975. Please quote above ref. number.

Ulster College | **Northern Ireland Polytechnic**
FACULTY OF TECHNOLOGY

SCHOOL OF MARITIME STUDIES

LECTURER II/ SENIOR LECTURER-MARINE ENGINEERING

An opportunity for a Marine Engineer to widen his experience by teaching appropriate subjects at various levels in courses leading to DoT Certificates of Competency and HND in Shipbuilding Technology within the School of Maritime Studies. Applicants should hold the First Class Certificate of Competency in Marine Engineering and preferably be Chartered Engineers.

The Faculty laboratories are new, extensive and extremely well equipped and the teaching facilities are also of a high order. Scope for research and industrial collaboration are provided and staff are actively encouraged to utilise these and the other considerable opportunities for staff development.

SALARY SCALE :
£2,670-£4,206 (Efficiency Bar)
£5,010 (Work Bar)—£5,412

For Lecturer II/Senior Lecturer posts, starting salary may be at any point of the scale. Normally this would be within £2,670-£4,206 but for persons of appropriate qualifications and experience, this can be at a higher point. All scales are subject to an additional £229 threshold payment and are under review with effect from 1 April 1975.

The Polytechnic occupies a semi-rural position on a 114 acre campus overlooking the sea at Jordanstown, a pleasant and quiet residential area. There is a scheme of assistance with removal expenses. Further particulars and application forms which must be returned, by August 25, may be obtained by telephoning Whiteabbey 85131 extension 2243 or by writing to :

The Establishment Officer, Ulster College,
The Northern Ireland Polytechnic,
Newtownabbey, Co. Antrim, BT37 0QB

Lothian
REGIONAL COUNCIL

NAPIER COLLEGE OF COMMERCE AND TECHNOLOGY

The opportunities exist to join a major DEVELOPMENT PROGRAMME IN COMPUTER ASSISTED LEARNING. The Project will extend the scope and application of an existing Mathematical Laboratory and involves co-operation work with Falkirk and Paisley Colleges of Technology.

EDUCATIONAL DEVELOPMENT OFFICER (Ref. 4M/1)

The person appointed will assist with the specification of the system, the design and preparation of teaching materials, liaison between the co-operating institutions and will have a role in the educational evaluation of the project. Applicants must possess experience in teaching service Mathematics in the Further or Higher Education sector. A knowledge of computing would be an advantage.

EDUCATIONAL EVALUATOR (Ref. 4M/2)

The person appointed will assist with the evaluation and be expected to use a variety of evaluation methods with the various groups concerned with the project. The Project is broad in its concept and will give scope for initiatives. Applicants should possess a degree in Education, or a related subject, with some specialisation in psychology and/or sociology.

PROGRAMMERS (Ref. 4M/3)

TWO programmers are required to develop the software for a mathematical interfacing language providing powerful mathematical facilities to non-computer specialists. Applicants should have some scientific programming experience, preferably using Fortran IV. A variety of computers will be used and experience with a mini-computer would be an advantage.
All the posts are tenable until November 1977 and the starting salaries will be :

Educational Development Officer	£2,667 to £3,894
Educational Evaluator	£2,667 to £3,171
Programmers	£1,962 to £3,681

For all posts, placing will depend on qualifications and experience.
Further particulars and application forms from the Academic Registrar, Napier College of Commerce and Technology, Colinton Road, Edinburgh EH10 5DT to whom applications should be returned within 14 days of the appearance of this advertisement, quoting reference number.

STRATHCLYDE REGIONAL COUNCIL
Department of EDUCATION

LANARK Sub-Region

BELL COLLEGE OF TECHNOLOGY, HAMILTON
Post L/EOS/8

COLLEGE REGISTRAR

Salary Grade A.P.IV (£3,321-£3,681)
Salary Scale under National Review
(RE-ADVERTISEMENT)

With the approval of the Scottish Local Government Staff Commission applications are invited for this Senior Post in Bell College of Technology, Hamilton.

The Registrar is the Chief Administrative Officer of the College and is responsible to the Principal for all administrative services and non-teaching staff with the exception of the Library Staff.

Applicants should preferably hold a University Degree or similar, suitable qualification and, should have administrative experience in a position of major responsibility in the field of higher education or of public administration.

Mortgage facilities ; removal expenses ; superannuation ; staff life assurance schemes.

Previous applicants need not re-apply as they will be automatically considered and other things being equal, preference will be given to Local Government Employees in Scotland.

Application forms obtainable from the Assistant Director of Manpower Services, Regional Offices, HAMILTON, ML3 6AQ, should be returned by 18th AUGUST, 1975.

R. M. O. McCulloch,
Director of Manpower Services.

SHEFFIELD
POLYTECHNIC
DEPARTMENT OF ECONOMICS AND BUSINESS STUDIES
RESEARCH FELLOW IN SOCIO-LEGAL STUDIES

Applicants must be experienced in field work, qualifications in other Sociology law or psychology.

The person appointed will join a multi-disciplinary team in the Legal Studies Unit. The post requires initiative, research skills and a willingness to work in conjunction with the Legal Studies Unit. The appointment of Research Fellows will be for an initial period of 3 years.

Salary Scale : £5,031-£5,955 (bar)—£6,417.

Application forms and further details obtainable from the personnel Officer, Sheffield Polytechnic, Pond Street, Sheffield 1. Telephone 20911 ext. 2213, to whom completed forms should be returned within fourteen days of the appearance of this advertisement.

SHEFFIELD
POLYTECHNIC
DEPARTMENT OF URBAN AND REGIONAL PLANNING
PRINCIPAL LECTURER/ SENIOR LECTURER/ LECTURER II in URBAN AND REGIONAL PLANNING

The person appointed will join a multi-disciplinary team engaged in teaching and course development at undergraduate and post-graduate levels. Research and consultancy are encouraged.

Salary Scales : Principal Lecturer £5,940-£6,642 (bar) £7,878
Senior Lecturer £5,031-£6,642 (bar) £7,878
Lecturer II : £3,972-£5,031

Application forms and further details obtainable from the personnel Officer, Sheffield Polytechnic, Pond Street, Sheffield 1. Telephone 20911 ext. 2213, to whom completed forms should be returned within fourteen days of the appearance of this advertisement.

Polytechnics continued

KINGSTON POLYTECHNIC

School of Economics and Politics

Lecturer II/Senior Lecturer in International Economics

Applicants should have a higher degree and preferably teaching experience. The successful applicant will be expected to teach International Economics as an option on two degrees offered in the School; also to teach macro-economics to first- and second-year students on a number of courses. Appointment to start as soon as convenient.

Salary: Senior Lecturer, £4,704-£5,910
Lecturer II, £3,168-£4,974
(inclusive of threshold and London allowance).

Further details and application forms (to be returned by Tuesday, 26th August, 1975) from Appointments Officer, Kingston Polytechnic, Penrhyn Road, Kingston upon Thames, KT1 2EE. 01-549 1366.

BRISTOL

THE POLYTECHNIC

DEPARTMENT OF COMPUTER STUDIES AND MATHEMATICS

TEMPORARY LECTURER (Grade I)

This is a 1 year appointment (likely to be renewable as soon as possible.

Applicants should be able to teach in one or more of the areas of mathematics statistics, computing and data processing. The Department is responsible for the teaching of these subjects across the whole Polytechnic and the successful candidate can expect to find himself teaching HND or 1st year degree level courses to students who are not specialising in these areas.

Salary Scale: £1,869 to £3,675 (under review).

Starting salary according to qualifications and experience in a higher starting salary for good honours graduates.

Further details and application forms can be returned by 20th August 1975 to Personnel Office, Bristol Polytechnic, Ashley Down, Bristol BS7 9DB.

Please quote appt Reference Number LEI 145 in all communications.

HATFIELD

THE POLYTECHNIC

SCHOOL OF NATURAL SCIENCES

PHYSICS

RESEARCH ASSISTANTS

Posts are available for Graduate Physicists interested in working for a higher degree in one of the following areas:

(1) Laser scattering for biological and other spectrums.

(2) High resolution spectroscopy using a scanning Fabry-Perot system.

(3) Electrical and structural Properties of GaAs thin films.

Further information and an application form may be obtained from Dr. I. K. Barker, The Physics Group, The Hatfield Polytechnic, P.O. Box 109, Hatfield, Herts AL10 9AB or telephone Hatfield 68100, ext 3153.

Closing date: September 10th. Please quote ref: 701.

SHEFFIELD

POLYTECHNIC UNION OF STUDENTS

ADMINISTRATOR

SO1 £3,339 to £4,848
(One-year post with Local Government Superannuation)

The Executive Committee of this about-to-expand Students' Union invites applications for the post of Administrator to be the senior permanent post in the Union. This is a brand new one, which is available from September 1st. Whilst the Union is in the public service of higher education in Sheffield, the duties cover a wide field of administration and management, including aspects of staff management or training schemes, the provision of administrative, secretarial and advisory services to committees and officers of the Union, financial administration, research, and report preparation.

The Union is a large and rapidly expanding association with several bars and shops. The new staff member will be responsible for over one third of a million pounds annually. A purpose-built new building is being planned and the Union will merge with two colleges of education within the year.

Applicants should have at least five years senior administrative experience, be aged 30+, possess a degree, a professional qualification or have substantial relevant experience. They must be sympathetic with the objectives of the Union and will be able to fill the role of a professional adviser.

Further details and application forms, which should be completed before applying, available from:

The President, Sheffield Polytechnic Union of Students, Arundel Street, Sheffield 1. No telephone applications will be considered.

Closing date: 14th August.

Colleges and Institutes of Technology

BOLTON INSTITUTE OF TECHNOLOGY

Applications are invited for the post of:

Principal Lecturer in Physics

Applicants must be well qualified and have extensive teaching and administrative experience. The appointee will hold a senior position in the Science Department and will be directly responsible to the Head of Department for the efficient day-to-day running of the Physics Section. In addition to teaching duties the post involves substantial departmental administrative responsibilities.

Salary is in accordance with Principal Lecturer's Scale—£5,940-£7,579.

Further details may be obtained from the Chief Administrative Officer, Bolton Institute of Technology, Deane Road, Bolton, to whom completed application forms should be returned by 15th August, 1975.

Overseas

The British Council

Invites applications for the following posts:

English Textbook Project (Algeria)

Two posts—Consultant to the project and Textbook Writer.
Graduates with TEFL qualification and relevant textbook writing and syllabus development experience.
Salary: Consultant—£4,334-£5,594 pa.
Textbook Writer—£3,385-£4,264 pa.
Benefits: overseas allowances; free accommodation.
One-year contracts 74 REG 75 CE 14

English Language Teaching Institute (Sudan)

Academic Director, Khartoum
Degree, qualification in applied linguistics or similar relevant field; at least 3 years' experience.
Salary: £4,264-£5,524 pa.
Benefits: overseas allowances. Two-year contract, renewable. 75 CO 111

Director of English Studies (Thailand)

DTEC Language Institute, Bangkok
Graduate with TEFL qualification and considerable experience. UK citizen.
Salary: £4,264-£5,525 pa.
Benefits: overseas and children's allowances; free accommodation; medical scheme; employer's portion of UK superannuation. Two-year contract, renewable. 75 UO 97

Lecturer in English (Saudi Arabia)

Medical Faculty, Riyadh University
Responsibility for ELT programme for pre-medical students. Candidates, men only, must have TEFL qualification and experience.
Salary: £4,704-£8,047 pa, tax free.
Benefits: housing and furniture allowance. One-year contract, renewable. 75 AU 323S

Lecturers in English (Algeria)

Institut de Technologie de l'Education in Algiers and Constantine
Graduates with TEFL qualification and experience. Knowledge of French essential.
Salary: £2,746-£4,264 pa.
Benefits: overseas allowance. Two-year contract. 75 CO 128, 129

Return fares are paid. Local contracts are guaranteed by the British Council.
Please write, briefly stating qualifications and length of appropriate experience: quoting relevant reference number for further details and an application form to The British Council (Appointments), 65 Davies Street, London W1Y 2AA.

Fellowships and Studentships

LANCASTER

THE UNIVERSITY

PROFESSIONAL FELLOWSHIP IN STATISTICS APPLIED TO THE SOCIAL SCIENCES

Applications are invited from professional statisticians and others suitably qualified persons (or a Professional) Fellowship in Statistics Applied to the Social Sciences, sponsored by S.S.R.C.

The post (which will not involve routine teaching) will be held for two years in the first instance, but the University desires on the expiry of the Fellowship, funds permitting, to establish Chairs in the subject. The Fellow will be invited to apply for this post.

Lancaster's main strengths in Applied Statistics in the Social Sciences lie in the fields of: (a) Educational Research, (b) Psychology, (c) Economics and Geographical aspects of Regional Planning, (d) Political Science and International Relations, (e) Management and Organisational Sciences, (f) Accounting and Finance. The Fellow will be expected wish to work on problems of methodology and application related to one or more of these but applications will also be welcomed from candidates with other interests. The Fellow will have the support of the University's existing team of active statisticians.

The salary will be at professorial level.

Further details may be obtained (stating reference SF/3/D) from the Registrar, University of Lancaster, Lancaster LA1 4YW, to whom completed application forms should be sent not later than 30th September 1975.

GIPPSLAND INSTITUTE OF ADVANCED EDUCATION

1976 Staff Appointments

In addition to currently advertised academic staff appointments available in 1975, the Institute is planning its 1976 staff appointments and it is anticipated that a number of additional new positions will become available in the following areas at either Principal Lecturer, Senior Lecturer or Lecturer level. These will be advertised in due course.

SCHOOL OF BUSINESS AND SOCIAL SCIENCES

* Business Studies — (Economics, Accounting, Administrative Studies, Law, Farm Management)
* Sociology/Welfare Studies
* Literature
* Mathematics

SCHOOL OF EDUCATION

* Philosophical and Historial Foundations of Education
* Sociology of Education
* Educational Psychology
* Curriculum Studies (Primary, Mathematics, English, Creative Activities/Art, Music, Drama, Physical Education)

SCHOOL OF ENGINEERING AND APPLIED SCIENCE

* Physics — (Environmental Physics, Applied Physics)
* Biological Sciences

SCHOOL OF VISUAL ARTS

* Art History
* Graphic Design
* Printmaking
* Sculpture
* Ceramics
* Multi-media Studies

LIBRARY

* Deputy Librarian

Potential applicants for appointments in the above areas in 1976 are invited to make enquiries and register their interest with the Institute at this stage, and to submit a brief resume of personal particulars, qualifications and experience. The Institute will be pleased to provide preliminary information concerning the proposed staff appointments for 1976, and terms and conditions of employment.

Current academic salary scales are:

Principal Lecturer — $(A)16,971 p.a.
Senior Lecturer — $(A)15,954 to $(A)16,344 p.a.
Lecturer — $(A)11,886 to $(A)15,684 p.a.

Enquiries should be addressed to:

The Registrar,

Gippsland Institute of Advanced Education

P.O. Box 42, Churchill, Victoria, Australia, 3842.

SCVC

State College of Victoria at Coburg
Melbourne, Australia.

The State College of Victoria at Coburg, situated in Alva Grove, is a constituent college of the State College of Victoria. It is under the control of an autonomous council and currently offers courses in teacher education. Plans are being prepared for diversification into other areas of vocational preparation. A number of new courses are expected to operate in 1976.

Applications are invited for the position of —

Vice-Principal

DUTIES: Under the Principal to assist in the general administration of the College; to exercise leadership in course planning and in the academic development of the College; to convene and participate in committees; and to carry out such other duties as the Principal may from time to time determine.

QUALIFICATIONS: An approved university degree with post-graduate qualifications preferably including a doctorate. Applicants should have proven administrative talent, preferably with successful administrative experience in a diversified tertiary institution. Qualities of integrity, intellectual ability and executive drive are essential.

SALARY: $A23,669 per annum.

Fares for the successful applicant and his family and reasonable removal expenses will be paid.

CONDITIONS: Full details concerning conditions of employment and information about the College and the S.C.V. system may be obtained on application to the Principal Dr. J. Banfield, S.C.V. at Coburg, P.O. Box 179, Coburg.

APPLICATIONS: Applications should include a curriculum vitae, the applicant's present address and telephone number, the names and addresses of two referees, and the date when available to commence duty.

NOTE: The College Council reserves the right to appoint by invitation or to make no appointment in response to this advertisement.

Applications close on MONDAY, 18th August, 1975, with —

The Principal,
State College of Victoria at Coburg,
P.O. Box 179,
Coburg, Victoria, 3058, Australia.
Telephone: 35-4324.

USS

UNIVERSITIES SUPERANNUATION SCHEME LTD

DEPUTY TO THE CHIEF EXECUTIVE OFFICER

Universities Superannuation Scheme Ltd is the Trustee Company which is responsible, at its office in Liverpool, for the operation of the new Superannuation Scheme for the academic staff of all UK Universities. The Scheme is compulsory for all new employees from April 1, 1975, and approximately 55,000 existing staff have an option to transfer to it over the five years up to 1980.

It is now proposed to appoint a senior person who will be involved in a variety of interesting aspects of pension scheme administration, including maintenance of records, calculation and payment of benefits, dealing with up to 750,000 individual life insurance policies and accounting requirements, and who will deputise for the Chief Executive Officer.

Applicants should have a degree and a professional qualification and wide experience of pension fund administration in a responsible position. A knowledge of computer data processing, life assurance, accounting or university administration would be an advantage. A salary of £7,000 is proposed for this appointment.

Applications should be sent to —

P. Sillitoe MA FIA FBCS, Chief Executive Officer
USS Ltd
Old Tower Building
33 Water Street
Liverpool L2 8TD

Overseas continued

ENGLISH LANGUAGE TEACHERS

The Petroleum Institute of Tripoli requires English Language Teachers with B.A. qualification in English and teaching experience.

Please send applications to:

General Director,
Libyan Petroleum Institute,
P.O. Box 6184, Tripoli, Libya

Administration

COUNCIL FOR NATIONAL ACADEMIC AWARDS

Administrative Assistants

Applications are invited for two new posts of Administrative Assistant. It is intended that the Administrative Assistant will primarily be concerned with maintaining links between the "academic" units of the Council's organization, headed by the Senior Assistant Registrars, and the central administrative services, in particular the Council's Information and Statistics Unit. Their duties will involve them in the preparation of data about courses which have been or are about to be validated by the Council, assisting in the compilation of statistics on courses and students and possibly some committee work. Applicants should preferably be either graduates following a career in Educational Administration, or persons who have already obtained relevant experience in an academic institution.

Salary on appointment will be within the scale of £3,251 to £4,787 (currently under review), including threshold and London allowance payments.

Further particulars may be obtained from the Secretary, the Council for National Academic Awards, 344/354 Gray's Inn Road, London WC1. Closing date for applications 18th August, 1975.

LEEDS

THE UNIVERSITY

SCHOOL OF MEDICINE

Applications are invited from GRADUATES, preferably with some previous administrative experience, for a post of ADMINISTRATIVE ASSISTANT in the office of the Dean of the Faculty of Medicine. Commencing salary will be within the range £2,119 to £3,189 (under review) and will take full account of age and qualifications.

Application forms and further particulars may be obtained from the Registrar, The University, Leeds LS2 9JT, quoting reference number 9/S7/50. Closing date for applications 18th August 1975.

MANCHESTER

THE POLYTECHNIC

ASSISTANT SECRETARY (FINANCE)

Salary £6,405 to £6,864

We are seeking a qualified accountant with experience of financial administration at a responsible level to undertake responsibility for the management of the financial affairs of the Polytechnic (approximate annual revenue expenditure £10,000,000). Experience of the Education Service would be an advantage but is not essential.

The successful applicant will form part of the Secretary's management team and will be given every opportunity to play a full and effective role in the affairs of the Polytechnic.

Removal expenses scheme including lodging allowance in appropriate cases is available.

Further particulars are obtainable from the Secretary, Manchester Polytechnic, Lower Ormond Street, Manchester, M15 6HX, to whom applications with full details including the names and addresses of three referees should be sent by 18 August, 1975. Please quote S/455/3.

Librarians

LOUGHBOROUGH UNIVERSITY OF TECHNOLOGY

ASSISTANT LIBRARIAN

Applications are invited for the post of Assistant Librarian (Accessions) to control the accessions section, assist with materials selection, and possibly to participate in automation development. Preference will be given to graduates with professional library qualifications.

Salary will be within Grade 1A (£2,118-£3,900) plus threshold payments of £229.66 p.a. New higher scales have been partially agreed. Postcard requests for further details and application forms to Assistant Registrar (Establishment) (ref.: 75/34).

Loughborough Leicestershire

General Vacancies

HM Inspectors of Schools

Higher and Further Education

Applications are invited from men and women, preferably aged between 35 and 45, for appointment as HM Inspectors to work mainly in the field of Higher and Further Education, excluding the universities. All HMIs undertake general duties as well as specialist work. Candidates should therefore have an interest in Higher and Further Education generally and not only in the specialised areas listed below.

Youth and Community Work. In addition to appropriate qualifications in youth, community or social work, applicants should preferably have teaching or other relevant experience in schools, Further Education (vocational or non-vocational), or the field of community studies.

Social Sciences. Applicants should have a good honours degree in sociology or the social sciences and have appropriate teaching experience in Further or Higher Education. Qualifications and/or experience in social, community or youth work would be an advantage.

Health and Home Economics. Applicants should have academic qualifications and experience in one of the following areas: nursing, home economics, preparatory courses in the field of health and welfare. In addition they should have teaching experience in Further or Higher Education and be prepared to take a general interest in the educational opportunities available to women and girls.

General Education. Applicants should have academic qualifications in the humanities, the social or physical sciences or in technology. They should have good and varied teaching experience in Further or Higher Education. Experience of teaching general studies and of curriculum development would be an advantage.

Construction. The work will involve all aspects of construction education at craft, technician and professional level. Applicants should have a degree and/or an equivalent professional qualification in one or more of the following disciplines: architecture, building, civil engineering, building services engineering, estate management, quantity surveying, town planning. Appropriate teaching and professional/industrial experience is essential.

Business Studies. Applicants should have good academic and/or professional qualifications in business studies and experience of teaching advanced work in Further or Higher Education. A specialism in Law is essential for one of the 2 posts available. Relevant non-teaching experience would be an advantage for both posts.

Starting salary within the range £6,825-£8,415 (higher in London). Higher posts are normally filled by promotion.

Application forms (to be returned by 22nd August) may be obtained by writing to Miss S. C. Taylor, Department of Education and Science, Elizabeth House, 39 York Road, London SE1 7PH, or by telephoning London 01-928 9222 ext. 2237 or 2613. Please quote reference 5/75E.

NATIONAL YOUTH BUREAU

on behalf of

CONSULTATIVE GROUP ON YOUTH AND COMMUNITY WORK TRAINING

invites applications for

PROFESSIONAL ADVISER

for the

CO-ORDINATION AND VALIDATION ON IN-SERVICE TRAINING FOR YOUTH AND COMMUNITY SERVICE PERSONNEL

A Panel, representative of all interests concerned, is being established to carry out this task on behalf of the Consultative Group at the invitation of the D.E.S. It requires the services of a Professional Adviser. The person appointed will have experience in the education and training of youth and community and allied workers and be able to make a professional judgement on the whole range of courses within the Panel's concern.

Salary within first four points of new H/F.E. Principal Lecturers scale (£5,940-£6,642).

Further details and application forms (to be returned by 15th August, 1975) from: Director, National Youth Bureau, 17-23 Albion Street, Leicester (0533 53811).

STATISTICS:

Lecturer required for week 18th-22nd August, to give day-time tuition to small group of professional students working to about A Level standard, possibility further part-time employment.

CHART TUTORS

MODERN COURT, FARRINGDON ST, E.C.4.
Tel: 01-236 3741.

Who cares what teachers think anyway.

Their political attitudes could only change the future.

What are the issues that affect their decisions and influence the way they vote?

In a unique survey commissioned through NOP on behalf of The Times Educational Supplement and The Times Higher Education Supplement, teachers' attitudes before and after the October 1974 election are investigated:

how did they expect to vote?

how did they actually vote?

where did they stand on political issues affecting education policy?

how schizophrenic is the teaching profession?

how does voting behaviour reflect the strong conservative attitudes of teachers on educational questions?

This book, 'Teachers in the British General Election of October 1974', points the way to a greater understanding of voting behaviour and inter-relation between political and professional attitudes. At £1.95 per copy it is a must for those who really do care what teachers think.

Copies are obtainable through leading bookshops or by writing to the Marketing Manager, The Times Supplements, P.O. Box No. 7, New Printing House Square, Gray's Inn Road, London WC1X 8EZ. Fill in the request below and order your copies now.

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